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ANNUAL REPORTS
OF
THE PRESIDENT AND THE TREASURER
OF
HARVARD COLLEGE
1902-03



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Published by Harvard University
JANUARY 30, 1904

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PRESIDENT'S REPORT FOR 1902-03.

TO THE BOARD OF OVERSEERS:—

The President of the University has the honor to submit the following report for the academic year 1902-03,—namely, from September 25, 1902, to October 1, 1903.

Arthur Lincoln, a member of the Board of Overseers, died in Boston on the 10th of December, 1902, in the sixty-first year of his age. He had been elected in 1901 to fill a vacancy in the class elected at Commencement, 1900. He was a judicious and earnest man, a much-trusted lawyer, and a disinterested servant of many public interests, charitable, educational, and religious.

Henry Barker Hill, Professor of Chemistry, died in Cambridge on the 6th of April, 1903, in the fifty-fourth year of his age. As a teacher Professor Hill inculcated accurate thinking, thoroughness in work, and enthusiastic industry. As an investigator he exacted of himself and of all his assistants perfect candor, a demonstrated accuracy, and a high degree of finish. His publications always had these fine qualities, and on them rests his firm and wide reputation as a chemist. As an administrative officer he displayed decided capacity for business, inventive power in contriving new facilities for the students who thronged Boylston Hall, and a gift for inspiring others with something of his own devotion. Although he was a scientific specialist in every sense, he was not a narrow student, but a man of varied interests, and of serious attainments in music and literature as well as in science. He was modest and retiring, yet resolute and brave for the truth.

George Haven, Instructor in Gynaecology, died in Boston on the 27th of September, 1903, in the forty-third year of his age. He was Assistant in Obstetrics from 1894 to 1897, and Instructor in Gynaecology from 1895 to his death. He early

selected obstetrics and gynaecology as his specialty, and in 1887 began practice in Boston, where he served in the Dispensary, the Lying-in Hospital, and the City Hospital. Strong, refined, wise, and tactful, he demonstrated the value of his specialty at a time when its importance was often doubted. His skill in diagnosis and in operating had already given him a valuable practice, and his professional success gave weight to his teaching.

The death-rate in the University is remarkably low. Thus, there were three deaths in the year 1902-03 among the 632 persons who were members of the Governing Boards and the University staff, being only 4.7 in 1,000. Among the 4,261 students in the University in that year, excluding members of Radcliffe College and the Summer Courses, there were ten deaths, being 2.34 in 1,000. How great a reduction in the death-rate may be hoped for in civilized countries from the development of general intelligence, the progress of medical science and particularly of preventive medicine, and the enforcement of wholesome conditions of life, may be inferred from a comparison of the above statistics, with the following death-rates in 1900 of certain classes of males in the City of Boston : —

Males 15-20 years	5.71 per 1000
“ 20-25 “	8.13 “ “
“ 25-30 “	9.79 “ “

The members of Harvard University are more intelligent than the average of the population ; with a few exceptions they take advantage of all existing medical knowledge and skill ; and they live under more wholesome conditions than those of the people at large. Hence their low death-rate in comparison with that of average men of like ages.

Four professors in the Medical School resigned in 1902-03, — an unusual occurrence in a single year. Professor Franklin Dexter began his service to the School in the Department of Histology, where he was Instructor in 1884-85 ; but he gave the last ten years to the Department of Anatomy, as Demonstrator from 1893 to 1895, as Assistant Professor from 1895 to 1900, and as Associate Professor from 1900 to 1903. He

gave himself with such conscientiousness and energy to the work of teaching human anatomy and of supervising the dissecting-room, that he had no time for the medical research he preferred; and it was dissatisfaction with that condition of things which prompted his much-regretted resignation in the prime of life.

Professor Frank Winthrop Draper began to teach Legal Medicine as Lecturer in 1875; in 1884 he was made Assistant Professor, and in 1889 Professor of the same subject, which he has therefore represented in the Medical School for twenty-eight years. To his teaching he brought the results of wide reading and of long experience as a practitioner and a Medical Examiner. He often served as the chairman of committees; and the Faculty always felt sure that a piece of work so intrusted to him would be well and promptly done.

Professor Charles Burnham Porter came to an Assistant Professorship of Clinical Surgery in 1882, and the Professorship in 1887, from hard and successful service as Assistant Demonstrator (1867-68) and Demonstrator (1868-79) of Anatomy. He was an inventive, skilful, and assiduous teacher, always eager to advance the interests of his department, and to develop his subject in a clear and interesting way. His resignation was determined by the fact that he had reached the age limit of service on the surgical staff of the Massachusetts General Hospital.

Professor Oliver Fairfield Wadsworth had given twenty-three years of continuous service to the School, the first ten (1881-91) as Clinical Instructor in Ophthalmoscopy, and the last thirteen as Professor of Ophthalmology. He taught a limited though indispensable specialty without narrowness and with good judgment as well as skill, and had the satisfaction of seeing his specialty recognized as more and more serviceable to the community at large and particularly to the progress of medical diagnosis and treatment.

The Faculty of Arts and Sciences contained 132 members in the year under review. Its business is done, in good part, by committees; and service on one or more of these committees is expected from time to time of nearly all of the members of

the Faculty. This administrative work is often a considerable burden on members who want all their time for scholarly work and for teaching. It is therefore an interesting question whether it be possible to reduce the number of Faculty committees and the number of members on each committee without impairing the efficiency of the body. This measure would necessarily involve giving more power and responsibility to the officers of the Faculty, — the deans, secretaries, and recorders.

The Faculty devoted much time between the first of December and the middle of May to the discussion of the Tabular View, or schedule of lecture hours; but the discussion led to no improvement of the schedule, and indeed to no action at all. The Tabular View affects the personal habits of every teacher as well as of every student, and it reflects tenacious opinions on a considerable variety of subjects. Thus, it seems to many members of the Faculty very undesirable to put later in the day than half-past two any lectures which are attended by large numbers of students, lest the freedom of the students to engage in athletic sports should be interfered with. The afternoon hours, in general, are avoided by large numbers of students and by a large proportion of the teachers. Some professors think they cannot teach in the afternoon; and to some a lecture hour earlier than ten in the morning seems impossible; while others are ready to teach in any part of the day so their public work be concentrated in a few consecutive hours on two or three days of the week and not scattered through the day or the week so as to break up their time. Some members of the Faculty think that an unsymmetrical arrangement of the three hours a week given to a full course is extremely disadvantageous both to the students and to the teacher; while others are indifferent to this symmetry. In the Scientific School the choice of the student lies, in large part, between programmes and not between single courses; so that a large proportion of the subjects which make up each programme is practically prescribed to the student. These prescriptions can be conformed to under the existing Tabular View, although with much inconvenience. Any considerable departure from the existing schedule would probably cause

serious difficulties for the student of that School, or necessitate numerous readjustments of its programmes.

The conflict of opinions and wishes in the Faculty was so confused that no affirmative action could be taken. All motions made during the discussion were either rejected or withdrawn. The evils of the present Tabular View, therefore, remain without remedy. The attempt to use the hour from 7.45 to 8.45 A.M. has failed ; and all the lectures in arts and sciences have to be compressed into the seven hours from nine till one, and from half-past one till half-past four. The result is an injurious interference with the liberty of choice of the individual student among the courses which are nominally open to him. This interference is all the greater because the afternoon hours, particularly the hours from half-past one to half-past two and from half-past three to half-past four, are but scantily occupied. The limitation of choice for the student is not the only difficulty with the present Tabular View. The fact that only seven hours a day are used for lectures limits the successful development of departmental instruction by making it difficult to find available hours for new or improved courses. A new course on the History of Religions or on Music, for example, may find itself in disastrous conflict at half-past two on Mondays, Wednesdays, and Fridays with more than thirty other courses at the same hour of the same days.

The desire to keep the hours from half-past three to six free from lectures for the sake of athletic sports and other out-of-door exercise is in conformity with that general usage in the community at large, which prescribes the earlier hours of the day for work and the later for recreation ; but it is clearly not expedient that all the members of the University should endeavor to take their exercise at the same time. It is quite impossible to provide grounds, buildings, boats, and other apparatus adequate for four thousand students, if they are all to take their exercise simultaneously within two hours and a half. The desirable thing is to spread the use of these grounds, buildings, and apparatus over the whole day, and to cultivate among the students the utmost variety of habit in regard to the time of day for bodily exercise. It is all a matter of habit at what hour of the day open-air exercise

may be enjoyed. In warm climates the early morning or the evening is the only available time ; in temperate climates any hour of the day is available for young persons, except the hours immediately after eating. The same is true about the habit of mental work, — a habit of using any hours of the day or night may be cultivated. At the continental universities of Europe all hours are utilized for lectures, from seven in the morning till seven at night, without objection on the part of either professors or students. Here, certain blocks of courses occupy four morning hours of Monday, Wednesday, and Friday, or Tuesday, Thursday, and Saturday, and have a preference among the students because they occur at these favorite hours. A motion to give each full course two morning hours and one afternoon hour was defeated in the Faculty by a large majority (52-20), in spite of the fact that it would have put all courses on a level as regards desirability of position on the Tabular View. The main arguments against this plan were the lack of symmetry in the hours of each course, the interference with the afternoon freedom which would be caused by carrying into the afternoon even a single hour a week in numerous large courses, and the doubt whether this arrangement would much enlarge the individual student's freedom of choice. No other definite proposal for the improvement of the Tabular View was made during the long discussion ; and the congested condition of the Tabular View remains the one unsurmounted difficulty in the administration of the broad elective system of Harvard College. It is, of course, the multiplication of courses and the richness of the departmental offerings which have created the difficulty.

The system of Final Honors at graduation, which was instituted by the Faculty in 1867-68, enlarged in 1870-71, and maintained ever since with slight modifications, has never been successful. Final Honors have never been sought by any significant portion of the graduating class, and have never really affected, in any large measure, the scholarship of the College ; although a moderate number of individuals of high merit have taken them. The departments which now make most use of Final Honors are the Classics, English, History, Political Science, Philosophy, Music, and Chemistry ; but the

total number of persons taking Honors during the last six years has been but small.

	1897-98.	1898-99.	1899-00.	1900-01.	1901-02.	1902-03.
Highest Honors	4	3	3	3	5	7
Honors	12	14	6	13	15	17
Total	16	17	9	16	20	24

Final Honors were intended, first, to promote a reasonable degree of specialization by departments, and, secondly, to promote scholarship by large subjects as distinguished from success in single courses. The fact seems to be that other academic distinctions at graduation have been preferred to Final Honors, particularly the A.B. *summa cum laude* or *magna cum laude*.

Students who have satisfied the requirements for the degree of Bachelor of Arts at the end of three years have been in the habit of asking leave of absence from the College, and postponing for one year the taking of their degree, so that their names could stand in the Quinquennial Catalogue in the class with which they entered College. In order to do away with this artificial leave of absence, the Corporation, on June 1st, at the suggestion of the Faculty, determined that a student who satisfies the requirements for the degree of Bachelor of Arts at the end of three years shall be permitted to have his name entered in the Quinquennial Catalogue under the fourth year from his entrance, the date of the year in which the degree was actually conferred being entered in the Quinquennial against his name. Such students can enter the professional schools of the University immediately after graduating in Arts, without asking of the schools any exceptional treatment, such as had to be vouchsafed to all Seniors on leave of absence. (Compare the report of the Dean of Harvard College, p. 96.)

In October, 1902, the Faculty recommended to the President and Fellows, by a large majority, that they confer degrees about the middle of the academic year as well as at the end. The President and Fellows did not think it expedient to have any ceremony of conferring degrees in the middle of the year; but they expressed their willingness to confer any degrees which in the opinion of the several faculties had been earned

in the middle of the year, the diplomas thereof to be sent by mail or otherwise delivered from the offices of the several deans.

In November, 1902, on motion of the Dean of the Lawrence Scientific School, the Faculty voted that harmony be accepted as an approved entrance study for admission to that School, to count for two points. In the following January, on motion of Professor Paine, the Faculty voted that music be added to the list of studies for admission to Harvard College—harmony as an elementary study counting two points, and counterpoint as an advanced study counting two points. At the next meeting of the Faculty, counterpoint, counting two points, as an advanced study, was added to the list of studies for admission to the Scientific School. The subject of music thus obtained for the first time full recognition as an admission subject for entrance to an American college and an American scientific school. This action ought to have, within a few years, highly beneficial effects on the study of music in the secondary schools. It is, of course, only a return to the recognition of music as a culture subject originally given centuries ago in the earliest curricula for the baccalaureate.

The Dean of the Faculty of Arts and Sciences calls attention in his Report (p. 89) to the large number of interesting new courses which were authorized in 1902-03 for the academic year now current. This expansion was made possible by the large number of new appointments made in that year and the current year. The new appointments and promotions were, in fact, more numerous than prudence would have prescribed; but they permitted a considerable expansion and elevation of the instruction offered by this Faculty.

The attention of the Board of Overseers is invited to the remarks of the Dean of the Faculty (p. 90) on the relation of the Harvard admission examinations to the examinations conducted by the College Entrance Examination Board, a board which was originally organized for the benefit of the Middle States and Maryland, but whose work is now much more widely accepted.

One of the best pieces of work done by the Faculty of Arts and Sciences during the past year was the simplification of the

arrangements for admitting Bachelors of Arts to candidacy for the degree of Masters of Arts in the Graduate School. The change did away with the necessity of undertaking to rate Bachelors from other colleges in terms of the Harvard requirements, without lowering in the least the standard for the Master's degree. The ordinary requirement for that degree for graduates of any college or scientific school of good standing consists of at least one year of residence and study devoted to advanced work approved by the Administrative Board, on a plan of work pursued with some definite aim, though not necessarily lying wholly in one department or field. A large increase in the Graduate School followed this year immediately on this new legislation, but almost too quickly to have been really caused by it.

It appears from the Report of the Dean of Harvard College (p. 98) that the tendency at Harvard to complete the work for the degree of Bachelor of Arts in three years is strong, but that a large proportion of the men who abbreviate the College course go on with professional studies, either here or elsewhere. At the present rate of increase in the number of three-year men it will not be long before the majority of each entering class will obtain the degree in three years. A related fact is that the Senior classes are diminishing in number, so that the College as a whole would suffer a considerable loss of fees were it not that the other classes are gradually increasing in size.

It will be seen in the tables (pp. 99, 100) of the Dean's report that all the College classes lose many members each year — or, in other words, that many persons fall out of College by the way and fail to graduate, and that the net loss in the various classes is increasing. It is certainly no easier to stay in Harvard College than to enter it. Indeed, the percentage of eliminations is much larger within the College than it is at the entrance examination. Yet in spite of the publication year after year of the heavy losses of the successive classes, it is still a common belief that few young men who succeed in entering Harvard College fail to graduate. The fact is that there is a severe winnowing process all along the course. Thus in the course of the year 1902-03, or at its end, sixty-eight young

men left the Class of 1906; and sixty-six young men left the Class of 1905. These two classes numbered respectively 608 and 578; so that in both the loss was more than eleven per cent. in a single year. In addition, a considerable number of men from each of these classes were dropped to a lower class (see p. 99).

Three sorts of schools send pupils to Harvard College — public schools, academies and other endowed schools, and private schools; and, as a rule, two hundred or more schools contribute the six hundred or more persons who enter the various College classes in any one year. About 30 per cent. of these six hundred or more persons come from public schools; and these 30 per cent. can readily be compared, in respect to their success at the admission examinations, with those who enter from the other two sorts of schools. The percentages given in the table below were made up from the records, at the admission examinations of last June, of boys who came from schools which have sent at least one boy to Harvard College in each of the last three years. There were thirty-nine such high schools, of which twenty sent not more than two boys each into Harvard College last June.

	Honors (Grade <i>A</i> or <i>B</i>). Per cent.	Unsatisfactory (Grade <i>D</i>). Per cent.	Failures (Grade <i>E</i> or <i>F</i>). Per cent.	Total No. of Answer-books.
Public High Schools . .	16	36	15	1,217
Academies and Endowed Schools	12	37	22	866
Private Day Schools . .	11	39	21	585

It appears from this table that the candidates who came from public high schools were decidedly the most successful at the admission examinations. Dividing the academies and endowed schools into two classes — the academies like Phillips Andover or Phillips Exeter, and the boarding-schools like St. Mark's School or the Hotchkiss School — the following comparison results: —

	Honors (Grade <i>A</i> or <i>B</i>). Per cent.	Unsatisfactory (Grade <i>D</i>). Per cent.	Failures (Grade <i>E</i> or <i>F</i>). Per cent.	Total No. of Answer-books.
Academies	13	38	21	559
Boarding Schools	9	35	24	307

This second table shows that candidates from academies did a little better than candidates from the other boarding schools, but that both sets of schools were less successful than the public high schools. Many inquiries of this sort might be made within the College itself. For example, in June last 172 men took the degree of Bachelor of Arts with distinction. Of these, eighty-four came to College from public high schools, forty-four from academies and endowed schools, thirty-two from private schools, and twelve from other colleges. Again the honors belong to the public schools.

These facts are limited to the year under review, and are based on observation of only about seven hundred persons. So far as they go, however, they lend no countenance whatever to the allegation that the public schools turn out a less vigorous and conscientious class of young men than the other schools. On the contrary, so far as they go, they tend to prove that the product of the public school has more character and power of work than the product of the other schools. It is probably true that the public school boy has stronger inducements to exert himself than the other boys have; but that is one of his advantages, which is likely to serve him well till maturity and beyond.

As might be expected from the increase in the requirements for admission to the Lawrence Scientific School, it has now become much easier than it used to be for students to pass from the College to the Scientific School, or from the Scientific School to the College, and even to count an admission examination for either the College or Scientific School. The present condition seems to indicate that the Scientific School courses in General Science and for Teachers of Science may disappear before long, the real function of these courses being assumed by the College.

The large fluctuations in the percentages of failure at the admission examinations, both in elementary and in advanced subjects, continue to cause anxiety as to the good judgment with which the questions are written and the answers of the candidates examined. In subjects which are offered by very few candidates large fluctuations in the percentages of failure

are to be expected ; but in subjects which are offered by many candidates wide fluctuations ought not to occur (see p. 103).

The Dean of Harvard College urges strongly that the present number of scholarships with stipend is far too small, and in particular much smaller in proportion to the number of students than it was twenty years ago (p. 109). This may be one of the reasons why the growth of the College proper during the past ten years has not been more significant (25 per cent.).

The Dean of the Lawrence Scientific School (p. 112) reports with satisfaction that the examinations for admission to the Scientific School have now been brought to a level with those for admission to Harvard College, so far as the relative weights of the different subjects can be estimated. A greater variety of subjects may be offered for admission to the Scientific School than are counted for admission to the College ; but the amount of work required of candidates for either undergraduate department is now supposed to be the same as for the other. It is a subject for congratulation that the growth of the Scientific School has been but slightly checked by the great increase in its admission requirements,—a fact which indicates that the young men who aspire to the scientific professions, and their parents also, appreciate the importance of a thorough preparatory training.

More and more students go first through Harvard College and then seek the degree of Bachelor of Science, giving for the degree in Science an additional residence of one or two years. Transfers between the two undergraduate departments are regarded with favor by both the Deans.

A programme in Forestry was added in the Scientific School during the year 1902–03, the instruction to begin in the year now current. It is proposed to create gradually a four years' course in Forestry, and to provide, step by step, all the technical instruction in that subject which will be needed to give a thorough training for the profession. The establishment of this course illustrates once more the intention of Harvard University to provide suitable training for every intellectual pursuit, and therefore to feed every profession. No field of knowledge, and no province of art or skill, must be foreign

or strange to the University. It distinctly proposes to deal with all knowledges, and all arts which are not narrowly manual—and indeed with some of the arts in which highly trained senses and bodily skill play a large part, such as surgery, music, and drawing.

The Summer Courses in Arts and Sciences for six weeks beginning July 5th have become an important part of the function of the University. The attendance at Cambridge has rapidly increased for ten years past, in spite of the fact that many new summer courses have been established at other institutions:—

Year.	No. of Students.	Year.	No. of Students.
1894	505	1899	856
1895	575	1900	987
1896	617	1901	982
1897	718	1902	945
1898	759	1903*	1,391

A list of the departments in which courses of instruction have been given in recent years and of the registration in each department will be found in the Appendix (p. 330). The University is under great obligations to Professor Shaler for the energy and good judgment with which, as Chairman of the Committee on Summer Courses, he has conducted the novel and exacting business of the committee.

The Dean of the Graduate School points out (p. 123) that there are striking differences between the membership of that School and the membership of other professional schools which accept as members only persons who already hold a Bachelor's degree. In the latter schools a large majority of the first-year men are fresh from college; but in the Graduate School only about 32 per cent. of the first-year students entered the School in 1902-03 immediately after receiving their first degree in arts or science. The rest are one, two, three, or more years out of college. In the year under review 30 per cent. of the first-year students had received their first degrees four or more

* Year of the meeting of the National Educational Association at Boston, July 6-10.

years before entering the Graduate School. Moreover, in the Graduate School a little more than half the students remain but one year. Many of them have pursued graduate study elsewhere before coming to Harvard.

The Dean calls attention to the fact (p. 120) that the School is prepared to serve ministers, teachers, professional men, or men of affairs, who can afford to give a part of their time to study. The corresponding remark might be made about the Divinity School and the Medical School. Such universities as Berlin, Paris, and Vienna render large services to their respective communities in just this way. Among the two millions of people within easy reach of Cambridge there ought to be hundreds of competent persons who could avail themselves of the teachings of the University in some one department for a part of their working time.

It clearly appears in the Dean's report that the excellent German custom of migrating from one university to another in search of advanced instruction is establishing itself in the United States. It is a liberalizing and unifying custom, which promotes a good understanding, common sympathies, and serviceable fellowship among educated men in all parts of the country.

The ages at which young men are taking the degrees of Master of Arts, Master of Science, and Doctor of Philosophy at Harvard University are still deplorably high. A young man who has come steadily on through all the grades of his education ought to procure the degree of Master of Arts with ease by the time he is 23 years old. Of the 94 men who took that degree at Commencement, 1903, 12 were under 23, 16 were 23, and 66 were over 23. Of these 66, 35 were over 28. The degree of Doctor of Philosophy ought to be easily taken by the age of 25. Last June, of the 28 men who received the degree of Doctor of Philosophy, 2 were under 25, 4 were 25, and 22 were over 25. More than half the candidates were over 28. These figures show how irregular, broken, and often belated the higher education of young Americans in arts and sciences still is. The candidates for these degrees, as the Dean of the Graduate School points out (p. 139), are often men who come to the University for a year or more of

study after having been for several years engaged in active pursuits.

There is need of a new name for the Graduate School; because the schools of divinity, law, and medicine have all become schools open only to holders of a Bachelor's degree. They too are graduate schools in every sense; and they naturally feel that the appropriation of the term "Graduate School" to the advanced school of arts and sciences is misleading with regard to their own quality. Not only are the schools of divinity, law, and medicine graduate schools, but they lead on their students to the professional degree in a more regular and uniform manner than the Graduate School of Arts and Sciences has as yet been able to do; and their examinations for their respective degrees are as searching as those for the higher degrees in arts and sciences.

The Dean of the Divinity School (p. 154) reports that the School had in 1902-03 a larger staff than ever before, and that it is more and more successful in training ministers on a scientific method.

The very favorable recent experiences of the School in the management of its dormitory suggest that the Law School and the Graduate School might advantageously use buildings for the exclusive occupation of their own students. Divinity Hall differs from all the other dormitories in that it provides a common-room as a meeting place for all occupants of the Hall. The remarks of the Dean under this head (p. 155) should interest the administrative officers of the other schools.

The relations of the School with the Graduate School and the College become more and more intimate, — a natural result at Harvard University, considering that the chief object in view when the College was founded was the education of ministers. Philosophical, historical, sociological, and linguistic studies are appropriate to all three departments.

Another noticeable feature in the new development of the Divinity School is the resort to its instruction of men who have already spent some years in the ministry. These mature students are in part settled ministers, who live within reach of Cambridge, and can give a part of their time to study at the

University. Others are ministers who procure a year's leave of absence for the purpose of attending the University. The Summer School of Theology affords a short course of study for ministers who can only be away from their churches during part of a summer vacation. The two professions in which transformation and progress have been the most rapid during the last fifteen years are theology and medicine; and it is interesting to observe that in both these professions young men who have already been at work some years find it desirable to return to the University in search of the new knowledge and the new skill. It is also to be observed that these two professions, in which both their philosophies and their practices have been recreated within recent years, are the altruistic professions in which may best be combined the two passions most characteristic of the present generation, — the passion for truth and the passion for service.

The number of students at the Law School did not change much between 1900 and 1903, a fact which encouraged the Corporation and the Faculty to wait for the additional building which the School needs for the proper accommodation of its library; but a large increase in the number of students at the opening of the present year indicates that the construction of the new building ought not to be much longer delayed, particularly as all processes of construction nowadays are liable to be slow and embarrassed. An examination of the table in the Dean's report (p. 164), which exhibits the irregular growth of the School, shows that in the thirty years from 1870-71 to 1900-01 the number of students was multiplied by four, in the thirty years from 1873-74 to 1903-04 by five, and in the ten years from 1893-94 to 1903-04 by two. Some of the retrogressions are fully accounted for by changes in the regulations of the School and the advancing of its standards; but it is not possible to account for several of the sudden increases in the number of students. The gains have often taken the Faculty by surprise, as, for instance, in 1891-92, in 1895-96, in 1897-98, and in 1903-04. The Dean undoubtedly states accurately the cause of the remarkable development of the School since 1870-71, — "a spreading con-

fidence in our standards and methods as illustrated by our graduates."

Since the Divinity School and the Law School became strictly graduate, their Faculties have felt a good deal of dissatisfaction with the degrees they confer. A second Bachelor's degree is not so unmistakably the degree of a graduate school as a Master's or a Doctor's degree. The attention of the Overseers is invited to the remarks of the Dean of the Law School (p. 168) on this subject.

The year 1902-03 was a very interesting one for the Medical School. Financially it was a bad year; for the running expenses of the School outran its receipts by \$13,868.73. This serious deficit was due in part to the progressive reduction of the number of students in the School, caused by the requirement of a degree for admission, but in part also to a habit of somewhat extravagant expenditure for assistants, service, and supplies. This deficit, together with the certainty that there would be a further loss of tuition-fees during the year now current, made it necessary to reduce for the current year the salaries of a considerable number of instructors and assistants, and to curtail expenditure in various other directions.

Near the end of June the plans and estimates for the new buildings having been completed, and the transactions with the trustees of the several hospitals, which are to occupy the portions of the original tract purchased on Huntington and Longwood Avenues that the Medical School will not need, having been satisfactorily closed, the Corporation decided to begin the construction of the buildings if satisfactory bids could be procured. After a delay of two months the contract was signed with the Norcross Brothers Company for the construction of all five buildings with an exterior of marble, the work to be done within twenty-three months, barring delays from strikes. During the summer a new benefactor became responsible for the fifth building, and paid in towards its construction the sum of \$100,000. The contractors began work in September; and during the autumn much digging and grading have been done, concrete foundations to a large amount have been put in, and some stone has been set on the two smaller buildings.

It was a condition of the gift of Mr. John D. Rockefeller that it should be paid in proportion to the payments made on the \$765,000, on the raising of which Mr. Rockefeller's gift was conditioned, and that his pledge should not hold after January 1, 1904. Because of the unexpected delays in beginning construction, payments on Mrs. Huntington's gift of \$250,000, which made part of the \$765,000, were not likely to begin before the first of January, 1904. To overcome this unexpected difficulty in the Medical School Undertaking Mr. Rockefeller extended the limit of his pledge to the first of July, 1904.

The building part of the Medical School Undertaking is therefore well under way on plans which have been studied and restudied with great care and in every detail. A list of the funds pledged to the Medical School Undertaking and already in hand will be found in the Treasurer's Statement (pp. 56, 57). They amount to \$1,809,712.49, without counting Mr. J. Pierpont Morgan's gift of \$1,135,000, or Mrs. Collis P. Huntington's gift of \$250,000, on which no payments had been received up to the close of the financial year, since the construction of the buildings had not then been begun.

One urgent need of the Medical School has not been provided for by any of the recent gifts, — the need of a dormitory with a common-room and restaurant attached.

The report of the Dean of the Medical School (p. 171) shows in a striking way the objects for which these great new buildings are being prepared. The Medical School has become a place of active and varied medical and surgical research, as the Dean's list of researches made in the various departments abundantly proves. Hence the need of large laboratories supplied with every appliance which can facilitate, or make more fruitful, such researches. It is the hope of beneficent results from medical and surgical research that has made it easy to procure large gifts to the Medical School. Rich men who have intelligent imaginations see that there is a fair prospect of obtaining in medical laboratories great benefactions for the human race.

The Faculty desires to procure for work at the School the whole time of members of the fourth-year class. At present a

large number of members of that class are in service at hospitals, and can give only a portion of their time to the work of the School; and they have accordingly been charged one hundred dollars instead of two hundred dollars for the year's fee, and a graduation fee of thirty dollars. For students who enter the School hereafter the fee for the fourth year will be two hundred dollars, as for the other years, but no graduation fee will be charged.

The plans for an elective fourth year, already determined on by the Faculty, were studied in committee during the year 1902-03, and are well advanced. This change will apply for the first time to the Medical class which entered the School in the fall of 1902. From the beginning, the course of study for this class has been different from that of any earlier class, all the courses of the preceding years being affected by the fact that the fourth year is to offer a wide choice of elective studies.

The block system, by which the number of subjects pursued simultaneously by the individual student is reduced, and the amount of time devoted to each subject while it is pursued is increased, continues to be regarded as a decided improvement over the former system. It is an experiment in education which ought to have great interest in schools and colleges as well as in professional schools; but it should be remembered that the Medical School experiment is one that has been tried on mature men only.

The receipts from the summer courses given by the School were larger in the summer of 1903 than ever before, and the receipts from courses for graduates were larger than in either of the two preceding years. Such favorable indications are welcome, because these are directions in which the work of the Medical School ought to be greatly developed.

Extraordinary and hopeful success attended investigations of small-pox carried on by members of the Department of Pathology during the year under review. These investigations are to be continued at home and in the Philippine Islands, in the hope of making a very serviceable contribution to the etiology of small-pox and vaccinia.

The Dental School reduced its deficit of 1901-02 materially ; but still its expenses exceeded its receipts by \$2,124.80, in spite of the fact that the whole business of the School was conducted with prudence and frugality. It is apparent that this department of the University cannot be conducted in a progressive and thoroughly worthy manner without more endowment than it now possesses. It has only two funds—the Dental School Endowment of \$2,255.85, and the Henry C. Warren Endowment of \$23,000. In addition, it has money for building to the amount of \$20,802.33, and a balance at the disposal of the Corporation, principal and interest, of about \$30,000. The School does, through its instructors and students, a large amount of charitable work, as may be seen in the tables published in the Dean's report (p. 195). The teachers and students of the School not only perform in the infirmary a great amount of gratuitous service, but the School is obliged to pay, in many instances, for the medicine and materials used on the patients. The Faculty has recently raised substantially the requirements for admission, and now proposes to use, beginning in June, 1904, the entrance examinations of Harvard College and the Lawrence Scientific School as tests of fitness, instead of conducting, as formerly, examinations of their own. It is probable that the new requirements will, for a time, reduce the number of students in the School.

Instruction in dentistry, like instruction in surgery, is decidedly costly. The Dental student needs much of the same laboratory instruction which a Medical student receives, and he also needs to be taught by experts many dental processes and manipulations. He must personally receive, therefore, a great deal of skilful instruction—the kind of individual instruction which is always expensive. It is not reasonable to expect that a well-conducted dental school should meet its expenses from its fees, or even approach that result.

The great Bussey estate near Forest Hills contributes more and more to the resources and activities of the University, as well as to the enjoyment and instruction of the public. It is useful, first, to the students of agriculture and horticulture who live in its vicinity, and, secondly, to students of land-

scape architecture who make their headquarters at Cambridge. It is about to be useful, through the Arnold Arboretum, to the students in the new course of forestry in the Lawrence Scientific School. For this last class of students the Arboretum provides facilities of highest value, first, in its collection of living specimens of trees and shrubs, next in its library and indices, and thirdly in its dried collections. Again, through a combination of the State Board of Health and the Department of Comparative Pathology of the Harvard Medical School, a very useful work for the people of Massachusetts has been carried on at the Bussey Institution in the preparation of diphtheria antitoxin for public distribution. A portion of the Bussey estate is utilized for the animals used in the preparation of this antitoxin, and a portion of the Bussey building for the necessary laboratories. The same combination of medical authorities is about to enter on the preparation of vaccine for public distribution; and for this purpose a new laboratory is now being built near the present buildings of the Bussey Institution. The estate affords such admirable facilities for keeping animals to be used in the study of Comparative Medicine that the Corporation look forward to a resumption, at no distant day, of instruction in Comparative Medicine and Preventive Medicine for domestic animals—instruction which was interrupted when the Veterinary School was abandoned because no endowment could be procured for it.

The all-important problem as to the Library is how to obtain an adequate building and an endowment to meet the added cost of occupying the larger building. In the first place, it has become perfectly clear that the Corporation cannot accept new buildings unless such gifts are accompanied with funds the income of which will enable the Corporation to use the buildings provided. On this subject the Corporation have recently had two valuable object-lessons from thoughtful benefactors. The first was given by Mr. and Mrs. Nelson Robinson, when they endowed the building they subsequently erected for the Department of Architecture before they began to build it. The second was given by Mr. John D. Rockefeller, when he insisted on the Corporation procuring additional con-

tributions for the Medical School amounting to \$765,000 as the condition of receiving his own gift of \$1,000,000, the condition being founded on his conviction that unless these additions were made to the endowment of the Medical School, the School would not be able to live suitably in its new buildings when they were ready for occupation. There are, however, two very serious questions with regard to a new building for the Library, — namely, where it should be placed, and how large it should be. As to its site, it is the general opinion that the new Library, like the present one, should be in the College Yard. As to its size, the data are still lacking for a proper decision of the question. For how many volumes shall the new Library be built? For how many readers shall desks be provided? For how many librarians, cataloguers, and assistants shall provision be made? Any person who contemplates giving a building to the University will naturally desire to look forward to a tolerable permanence for his building. Such a building should have a monumental character, and should be worthy architecturally of its noble objects; but such a character cannot be imparted to a building which must be extensible in all directions, and therefore built by bits and never finished. A monumental and permanent building should be a unifying whole, or a finished unit. If, however, such a building is to stand in the College Yard, its dimensions and capacity must have moderate limits. It might contain, for example, stacks large enough for a million volumes, reading-rooms containing five hundred desks, and ample rooms for delivery, catalogues, and administration. Now, the collection of books in Gore Hall has more than doubled in twenty years, and it is impossible to suppose that the rate of increase is going to diminish. The number of students in the University also increases in a formidable manner; and affiliated bodies of students are likely to gather more and more about the University. There are already in Gore Hall 415,928 volumes, beside 280,000 pamphlets. Any one who is capable of looking forward twenty years must see clearly that a library building suitable for the permanent occupation of such a portion of the College Yard as can be given to it will not hold long all the books belonging to the

general library of the University. If this be certain, it will be wise to plan now for another place of storage for the books which can be removed from the College Yard with the least injury. A million books would seem to be a reasonable current stock to be kept on hand from generation to generation in the same building with the administrative offices and the reading-rooms. If the idea of a limited library could once be accepted, the classification of the books on the shelves could be made reasonably permanent; and the confusion of the catalogues caused by incessant reclassifying and rearranging could be avoided. When once the idea of completeness is abandoned, many sources of waste or fruitless expense in the conduct of the Library will be dried up. If a million volumes were provided for, each class might well contain a fair representation of all the best literature in the class. Profitable "browsing" by competent students would still go on, and the "browsing" would be all the better because the less valuable material had been culled out of the mass.

Another difficult matter is the question of retaining the present Gore Hall as part of the future Library building. The considerations which affect the mind of the Corporation on this subject relate to the best permanent policy toward its benefactors in an educational institution which has depended, and is likely to depend, in large measure on endowment for its means of public usefulness. It must be discouraging to future givers to see gifts, which were highly valued when they were first made, transformed beyond recognition, or contemptuously thrown aside, two or three generations later. The benefactors of the future should be encouraged by seeing that the benefactors of the past did a permanent good, and obtained a durable memorial among men. Thus far it has been the policy of Harvard University to preserve all named buildings which were capable of preservation. In its day Gore Hall was an extraordinary achievement and a benefaction of great moment. If possible, it should continue to be used for the high purposes to which it was originally devoted.

If the University possessed an adequate Library building situated in the College Yard, some of the special reference libraries might cease to exist if they were provided with

quarters in the new Library. Thus, the special libraries for classics, history, and political economy might be transferred from Harvard Hall to the new Library; but it is sure that many of the special libraries would still be best placed in the laboratories, museums, and drafting rooms where they are most conveniently used. All of the department libraries (p. 203) would continue to be separately maintained; and these libraries already number at least 225,000 volumes. The books belonging to the University will therefore never again be assembled under one roof, no matter how wide-spreading that roof may be.

The botanical establishment of the University is divided into five parts—the Gray Herbarium, the Cryptogamic Herbarium, the Botanic Garden, the Botanical Museum, and the Arnold Arboretum with its library and herbarium. These establishments are but partially endowed. They all depend on gifts made every year for present use—gifts which testify to the interest they inspire, but which do not give that assurance of permanence which all these botanical collections desire and deserve. Nevertheless, the work of all these collections goes vigorously on,—never more vigorously than in 1902–03 (pp. 222–232). Both at the Cambridge botanical department and at the Arnold Arboretum the first and greatest need is permanent endowment to a large amount. The second need at Cambridge is a fireproof building in which all the botanical collections and laboratories could be safely united.

In 1902–03 important additions were made to the teaching force in the departments of chemistry and physics; and both departments were active and productive in research. The elementary course in chemistry called “*B*” was withdrawn; but the withdrawal caused no injury to the department as a whole, the election of the other courses continuing to be satisfactory. The withdrawal of this course suggests the possibility of withdrawing the somewhat similar half-course in physics called “*B*.” These two courses have, however, been given in different ways, and they have probably answered somewhat different purposes. Physics *B* is substantially equivalent to the

second alternative requirement in elementary physical science for admission to College. The Director of the Physical Laboratory suggests (p. 239) that all students who propose to study medicine should take Physics *C*. This excellent suggestion is based on the fact that many physical instruments are now used in medical diagnosis and research, and that previous practice in the use of such instruments has immediate value for a medical student. The importance of chemistry in medicine seems to be better understood by College students than the importance of physics.

The teaching force in the Engineering Department was much strengthened by new appointments during the year under review; and in consequence the instruction given in the department was much enriched.

The Engineering Camp at Squam Lake was carried on during the summer with continued success, except that the necessity of buying new equipment for an increased number of students caused a deficit of \$1,774.02 in the account of the School. For next summer the charges to be met by the students will have to be somewhat raised in order to prevent the recurrence of a deficit. The use of a part of the summer vacation for study, exploration, visits to mines, mills, and factories, and out-door work in such subjects as horticulture, surveying, and forestry, is decidedly on the increase.

The Chairman of the Division of Engineering (p. 244) corroborates the observation of the Dean of the Lawrence Scientific School to the effect that students in Harvard College are more and more taking the less technical courses on engineering while they are in College, and subsequently transferring themselves to the Scientific School for a degree in engineering. It is the opinion of the Chairman that in this way a very satisfactory training for engineering may be procured.

The first volume of the Harvard Psychological Studies was published during the year under review. The volume contains sixteen investigations, which deal essentially with processes of perception, memory, emotion, and reaction. It is hoped that

a second volume, including several studies in animal psychology, will be published during next year. The Director's description of the researches carried on in the Psychological Laboratory (p. 245) will be found interesting and suggestive.

The report of the Director of the Observatory will convince any intelligent reader of two things, — first, that far-reaching plans and continuous, well-directed labor year after year to carry out such plans will yield the best results in scientific research, just as they will in a mechanical industry or in the administration of a school or college; and, secondly, that co-operation between different observatories in carrying out large pieces of routine investigation would make the money spent in such investigation more productive, and more promptly productive. The experience of the Harvard Observatory during the last twenty-seven years illustrates very forcibly the great advantage of assured continuity in scientific research. This continuity, of course, depends on an income which can be calculated on years in advance, and spent year by year in accordance with plans made with foresight for the incessant pursuit of a remote object.

The Director points out that the buildings and instruments belonging to the University have become altogether inadequate in comparison with its endowment. It has invested funds to the amount of \$905,000, but buildings and instruments cannot be procured from these funds unless out of their income; and then the regular activities of the Observatory would have to be reduced because of the temporary diversion of the money which supported them. Money for immediate use is therefore greatly needed at the Observatory to supply additional fire-proof buildings and improved instruments. In particular, the very valuable library of the Observatory should be placed in a fireproof building. Twenty thousand dollars would supply an adequate structure; and a like sum would provide another much-needed building for the computing-rooms, photographic laboratory, and work-shop.

The Keeper of the Museum of Comparative Zoölogy reports (p. 259) that gifts to the Museum were unusually numerous

and valuable during the year under review. The most considerable gift was the collection of recent and fossil insects from Mr. Samuel H. Scudder, one of the most eminent of entomologists, who was for many years an Assistant in the Museum.

Notable improvements have been made in several of the exhibition rooms by the introduction of cases glazed with large sheets of plate glass.

The special library of the Museum, like all libraries, continues to grow apace, and threatens to absorb a disproportionate share of space and annual income. It must provide room for readers, since its books are not allowed to be withdrawn from the building for home use. In spite of the fact that museums exist primarily for the exhibition of objects, all the University museums and collections seem to require collections of books under their own roofs; so that all of them are burdened with the inevitable charges of library maintenance and increase. There is this distinction, however, between the museums themselves and their libraries: the first are largely for the public; the second are for the benefit of the officers of the museum and of University teachers and students.

The Museum publications of the year (App., p. 322) were unusually voluminous. The two "Memoirs" published and two out of the thirteen numbers of the "Bulletin" were reports of the results of three of the Director's sea expeditions to the tropical Pacific, the Fiji Islands, and the Maldive Islands. Five volumes of the "Bulletin" and five of the "Memoirs" are now in course of publication. The publications of the Museum testify to its active productiveness; and they supply material for exchange with learned societies and libraries, thereby contributing largely to the development of the Museum library. They absorb, however, a considerable fraction of the Museum income.

The number of students attending the courses given in the zoölogical laboratories does not increase as it should. Zoölogy is not a subject which offers a career either in teaching or in manufacturing; and undergraduates who intend to be physicians or surgeons have not learned what a great advantage they can procure for their medical studies by taking two or

three half-courses in zoölogy while they are in the College or in the Scientific School. The colleges, and the various public services connected with health, food supplies, and the animal industries in general, afford the only chances of employment for professional zoölogists. Latin and Greek, English, and physics are subjects which give a livelihood much more surely than botany or zoölogy. This is not a reason why a university should restrict its teaching of these sciences, but it explains why comparatively few undergraduates study them.

The equipment of the Zoölogical Laboratory was improved during the year by the addition of aquaria for both salt water and fresh. About 4,500 gallons of water for this purpose is stored in concrete cisterns under ground, whence it is pumped by an electric motor into wooden reservoirs, from which it passes through wooden pipes to the aquaria. This useful equipment was a gift from a few friends of the department. It is a valuable means of instruction and research. Friends of the department also gave money to equip a temporary biological laboratory at Bermuda during the last summer, at which instruction was given to thirty-four persons, fourteen of whom were, or had been, connected with Harvard University or Radcliffe College. The laboratory was in charge of Professor Mark of Harvard and Professor Bristol of the University of New York; and important aid was given to the school by the Bermuda Natural History Society. The fauna of the Islands proved to be well adapted to the purposes of the school. The success of this enterprise is another evidence that there is active demand for laboratory and field teaching of many sorts during a large portion of the long summer vacation.

The report of the Geological and Geographical Department (p. 268) illustrates the same fact. An advanced summer field course in the regions about Utica and Catskill, New York, and Meriden, Connecticut, was chosen by four students; and a new summer course of geological field work in the Rocky Mountains was chosen by thirteen students, of whom seven were connected with Harvard University. Five weeks were spent in the high mountains of southwestern Colorado without sickness or accident; although during half of this

period the camp was at an elevation of more than 11,500 feet. For field work during term-time various interesting regions in eastern Massachusetts are utilized, this district having proved to be an excellent field for training geologists, because of the variety of the phenomena it illustrates and their complexity and difficulty.

Professor Davis was absent four months on a journey to the Caspian Sea and Turkestan to study physiographic problems as a member of Professor Pumpelly's Carnegie expedition.

The department possesses in the Gardner Collection of photographs a valuable means of teaching geology and geography. It has now been satisfactorily classified and catalogued, and contains 5,483 photographs and 3,780 slides. For large classes slides are far more valuable than photographs; but the slide is often made from a photograph.

The department took an interest in organizing the Harvard Travellers Club, with the object of uniting Harvard students and graduates and others interested in the promotion of intelligent travel and exploration. The Club numbers at present about one hundred members.

The Peabody Museum of American Archaeology and Ethnology is very inadequately endowed. It is a marvel that such valuable collections have been brought together in thirty-seven years, when one considers the slenderness of its resources. Its entire endowment is now \$206,346.30, of which \$83,125.87 has been received since 1890. In recent years most of the important explorations conducted by the Museum — explorations which have greatly enriched it — have been paid for by generous friends of the Museum interested in archaeological inquiries.

The number of courses of instruction conducted at the Museum has been recently increased; and there has been a corresponding increase in the number of students electing such courses. In April, 1903, the President and Fellows, on request of the Faculty of the Museum, determined to assume the care of the building, so far as fuel, cleaning, and the service of the janitor and the fireman were concerned. In taking this action, they recognized the fact that the building and its collections

were being used by students much more than formerly, and were also influenced in part by the consideration that the new Semitic Museum is heated from the Peabody Museum, and that the division of the cost of heat might give rise to undesirable discussions. This arrangement was made before the President and Fellows knew that the financial result of the year 1902-03 was going to be an unfavorable one.

The Museum receives from many friends numerous gifts of interesting and valuable objects. (See the Curator's report, p. 282.)

During the first half of the year the Semitic collections were arranged in the new building; so that on the fifth of February, 1903, the Museum was formally opened with suitable ceremonies.

A balance of nearly \$13,000 remains to be spent for collections; but the purchase of appropriate objects is necessarily slow. Desirable reproductions are not often to be had; and many difficulties surround the purchase of original objects. The surest way to increase the collections would be to equip an exploring expedition for some promising portion of the Semitic territory. Egypt, Palestine, Babylonia, Assyria, and Persia all offer inviting fields for well-equipped and competent exploring parties; and Harvard has already trained men competent for this work who are now in the service of other institutions.

The running expenses of the Semitic Museum are necessarily borne by the Corporation, the Museum having as yet no endowment. Its excellent lecture rooms are used by the Semitic Department and the Divinity School; and the Museum is open to the public daily, except Sundays and holidays, from 9 A.M. till 5 P.M.

The Director of the Fogg Museum reports the addition to the collections of numerous objects which are of high value as works of art. It appears, therefore, that the Museum is likely to become the store-house of original artistic objects of distinguished merit, as well as of casts, prints, and photographs. The objects especially mentioned by the Director are forty-seven bronze reproductions of Italian and French

medals, Turner's water-color drawing of Devonport, and an early water-color drawing by the same master. The Museum now possesses five original works by Turner, representing as many periods of his career. 1,124 photographs and 24 slides were added to the collection. The Loeb Collection of ancient bronze vases and gold ornaments has been suitably installed in the northwest room on the ground floor, which is now devoted exclusively to bronzes, coins, medals, vases, and kindred objects, for the most part of Greek and Greco-Roman workmanship. The Director calls attention to the fact that the Fogg Museum already includes a large amount of material illustrating both Semitic and Germanic art, and expresses the opinion that a common basis of action should be determined on by conference between the three Curators to avoid unnecessary duplication in the three museums — the Fogg, the Semitic, and the Germanic.

It will soon be necessary to enlarge the Fogg Museum (p. 296). Plans for wings have been prepared, the estimated cost of which is \$40,000 and \$50,000 respectively.

The report of the Curator of the Mineralogical Museum indicates that the collection has some well-disposed friends, if no endowment. It is much to be regretted that the University has no means of maintaining suitably and increasing this collection, which is one of the oldest in its possession. The Curator makes the most of a slender appropriation and of the gifts which come in year by year. The exhibition room is large, and the collection is in many respects a handsome one, but the central parts of the room need artificial light.

The Curator of the new Germanic Museum gives (p. 297) a summary description of the present contents of the collection. It follows from this description that it is not yet a Germanic but only a German Museum, the bulk of the collection representing German architecture and sculpture of the Middle Ages and the Renaissance. The ultimate object of the Museum should be to illustrate the development of Germanic arts and crafts throughout Europe on English, Dutch, Scandinavian, Swiss, and Austrian soil, as well as on German.


The Curator therefore describes the enlargement of the collection which will be necessary to make it truly Germanic in character, and to give it a just historical and at the same time an artistic arrangement.

The building in which the collection is temporarily housed — the Rogers building (1858) — has turned out to be singularly well adapted for the purpose, the light upon the casts and other objects being remarkably good. All the objects, both large and small, except the huge equestrian statue of the Great Elector, can be well seen. From that superb colossal figure the observer cannot remove himself far enough.

The collection is unique in this country, and it attracts a considerable number of visitors. Unfortunately, the Corporation is at present able to open it to the public only on Mondays and Fridays and on Sunday afternoons.

The number of students in Radcliffe College declined somewhat in 1902-03, but has risen again during the current year. The number of Graduate Students has increased satisfactorily. In the fall of 1902, \$116,500 was given to the College for a students' house where provision can be made for food and rest, for recreation and social intercourse. The building is to be called the Elizabeth Agassiz House, and is to stand next the Gymnasium on ground already owned by the College. This gift is one of large practical value for the College, and is also precious because it is to bear the name of the first president of the College, who has done much to determine the social, scholarly, and spiritual atmosphere of the institution and its permanent relations to Harvard University.

When Mrs. Agassiz withdrew from the presidency of the College in June last, Professor LeBaron Russell Briggs, Dean of the Faculty of Arts and Sciences in Harvard University, was unanimously chosen President of Radcliffe College. Under its charter, intimate relations with the Faculty of Arts and Sciences will always be essential to the welfare of Radcliffe College. Most of its principal teachers will always be drawn from that Faculty. By electing its Dean President of Radcliffe, the Associates drew closer the ties which bind the University and Radcliffe College together. President Briggs brings to his



new office experience in administration, a strong interest in the College, and both the intention and the capacity to promote the common interests of the two institutions and the special interests of Radcliffe.

The primary need of Radcliffe College is an endowment fund, the income of which can be used for the general purposes of the College. It also needs immediately another hall of residence, in order to provide comfortably for students from a distance. At present its students are chiefly drawn from eastern Massachusetts. In its Senior Class of 63 members, only 8 come from outside Massachusetts; in its Junior Class of 69 members, only 6 are from outside Massachusetts; in its Sophomore Class of 74, not one; and in its Freshman Class of 81, only 11. Many families at a distance are not satisfied to have their daughters live in scattered private houses without receiving the daily supervision of the College; and, moreover, young women so scattered cannot enjoy some of the most precious privileges of College life. Bertram Hall has demonstrated that there would be a demand for two or three more such buildings, particularly if they could be opened to students at somewhat lower prices. At present it costs nearly twice as much to send a girl to Radcliffe College as it does to send a boy to Harvard College, because former generations have provided educational endowments for the boy but not for the girl.

The Harvard Dining Association, which uses Memorial Hall, voted last June to try a new method of conducting its business. The new method is intended to prevent waste, and to cause the cost of carrying on the hall to be more equitably divided among the members of the Association, each member paying for what he himself eats of the more costly articles. The waste of the former method occurred chiefly in meat, fish, and eggs. These articles are, therefore, to be provided under the new plan only by the plate, and are to be paid for by the plate by means of a ticket book something like a railroad mileage book. Under the former system every man ordered as many plates as he pleased of any article. Under the new system he does not order more meat, fish, or eggs than he

wants to eat, or, if he does, he alone pays for what he orders. The cost of each man's board is in two parts. The first part is for meat, fish, and eggs, ordered and paid for by the plate; the second is for all other provisions, such as tea, coffee, cocoa, milk, vegetables, breads, butter, cereals, desserts, and fruits. These, and the service, coal, light, and all other running expenses are shared alike by all. Connected with this change of policy as regards the food was an effort to prevent the payment of gratuities to waiters. It had become the custom to pay a weekly fee to every waiter, but this payment was variable, unequal, and troublesome. To break up this undesirable custom the waiters' wages were raised, and all members were requested not to give fees. An agreement was also made with all the waiters engaged in September last that they were not to receive gratuities. The new wages of waiters are in three grades, according to length of service. (App., p. 328.)

This new method was put in force at the opening of the current academic year; and a vote on continuing the system was taken on November 20th, when it was decided, by a very large majority, to continue the system. The new method is an approach to what has always been the method in Randall Hall, and its predecessor the Foxcroft Club, where all the food is paid for *à la carte*, and the waiters are students who are paid by the hour and receive no gratuities. The advantages of the new plan are that it is less wasteful, more equitable, and, for the individual, more elastic. As compared with the method of Randall Hall, it is less troublesome for the individual member; for he is obliged to give an order, not for everything he eats and drinks, but for perhaps half the articles he consumes.

Every intelligent experiment on the wholesome feeding of students is of great interest in a large university; for, under the existing conditions of American society, it is impossible to build up a great university of national resort unless cheap and wholesome lodgings and food are systematically provided. A large majority of all the students in Harvard University need to be frugal in both these respects. The success of the two great Harvard Dining Halls is therefore a useful contribution to good theory and practice in university administration. They have been coöperative undertakings, managed

by the students, supervised rather from a distance by the Corporation, and aided as to their accounting by the Bursar. Neither Hall has ever cost the University treasury a dollar. Both have from time to time borrowed money from the University with which to make improvements; but both have paid regular interest on these loans, and made suitable provision for their extinction.

Another element in the cost of student life over which a university may wisely try to exercise some control is students' supplies of clothing, books, stationery, furniture, and fuel. Such a control is exercised by the Harvard Coöperative Society, a successful institution which started in 1882 without capital and without incorporation, and has gradually accumulated a capital of \$45,000. For the year ending 30 June, 1903, the receipts of the Society were \$296,491.24 and its expenditures \$274,663.42. In January, 1903, the Society was incorporated, and in the following summer it bought the Lyceum Hall property on Harvard Square, the best site in the neighborhood of the University for a retail shop. Delays over the title prevented the Society from occupying its new premises during the past autumn; but the transaction has now been completed, and another year will find the Society established in a well-situated and spacious building of its own.

The Harvard Union exhibited a distinct financial improvement in its second year. It has five sorts of membership—active (\$10 a year), associate (\$5 a year), non-resident (\$3 a year), graduate life (one payment of \$50), student life (one payment of \$75). In 1902–03 the membership increased in all these five classes. The life-membership fees are funded; and the life-membership fund now (December 1, 1903) amounts to \$49,300. The cost of carrying on the Union in a suitable manner may be fairly estimated at \$30,000 a year. In the year under review the expenses amounted to \$28,255.40, and were all met. For the current year the enrolment in each of the first three classes of membership is somewhat smaller than it was last year; and the business of the restaurant has not been so good as heretofore. This diminution of income results from the prevailing tendency to economy among the members

of the University. The Union needs for its comfortable maintenance at least two thousand life members, and at least two thousand active members (\$10 a year), beside a thousand associate members and a thousand non-resident members. Failing this large and steady membership, it needs endowment. At present only about two-thirds of the students in Cambridge are members of the Union, the other third having no use for it, or being unable to pay the annual fee. There can be no doubt concerning the social serviceableness and value of the Union. Its fees are very low, considering what it gives the members; and the reduction of these fees is not to be recommended. It is not conducted in an extravagant manner, but, on the contrary, simply and prudently. The richer students all join it; but they have not thus far contributed much else to its support. It would be an amiable thing if the present and past members of the small clubs, which enjoy the use of spacious houses in Cambridge, would exert themselves to make the financial future of the Harvard Union secure,—the younger men by giving money, and the older men by giving money and becoming life members.

The results of a canvass of all students in the University with regard to their habitual sports and exercises will be found in the report of the Chairman of the Committee on the Regulation of Athletic Sports (p. 115). The school which made the largest percentage of replies was not the College, as might have been expected, but the Dental School; and the third in readiness to reply was the Medical School. The exercises most used by the students are gymnasium exercises, lawn tennis, hand-ball, and golf. The games in which the public is most interested—namely, foot-ball, base-ball, and rowing—are serviceable to much smaller numbers of students, no one of these three sports serving more than one-sixth of the total number of students who reported the exercises they used. The game which has been conducted at Cambridge with the least intelligence and success is foot-ball,—except from a pecuniary point of view.

The breaking up of College work for the individual student by frequent absences to play games at a distance from Cam-

bridge is an evil which ought to be checked. It is a greater evil than formerly, now that intercollegiate games take place all the year round — that is, in winter, as well as in spring and autumn.

The Class of 1879 having offered to give \$100,000 towards building on Soldier's Field a Stadium of concrete and steel, ground for this structure was broken at the end of June last, and the work was diligently prosecuted under the supervision of Professor Ira N. Hollis, till by the middle of November the huge structure was about four-fifths finished, and was in a state to be used for the foot-ball matches of November 14 and 21. There have been spent on the Stadium thus far the gift of the Class of 1879 and about \$100,000 saved during several years from the gate-money. The structure, when finished, will be a stately and impressive one; and it will enable 30,000 people to witness various athletic sports in a safe and convenient way. What the durability of the structure will be time only can show. It will be completely exposed to rain, snow, and frost, and to a range of temperature of some 130°. The University bears no part of the risks of the experiment; for it will not have contributed a dollar to the cost of the structure. The Class of 1879 and many other friends of the University would be glad to have the Stadium used for other purposes beside games. It has been suggested that it might be available for the festivities of Class Day, and possibly for other large academic assemblages. When the building is finished it will be interesting to learn how well the human voice can be heard from the field by persons seated in the southern — the round — end of the Stadium.

Professor Hollis retired from the Chairmanship of the Committee on the Regulation of Athletic Sports at the close of the year under review, having served the University well in that difficult post for seven years. All the improvements on Soldier's Field, including the Stadium, have been made under his direction; and he has given to the work of the Athletic Committee a deal of time and labor under circumstances which have often called for patience, endurance, and firmness. For the promotion of serviceable athletic sports among the students he has made many sacrifices, and has earned the grati-

tude of those who believe that American youth ought to have the opportunity of enjoying a great variety of athletic sports reasonably and honorably conducted.

So soon as a student in any of the Cambridge departments of the University finds himself sick, he is expected to give notice of that fact at the office of his department, either by visiting it himself, or by sending a friend on his behalf, to fill up a blank called a "sign-off." This "sign-off" explains his absence from his usual duties. The object of the University in requiring this information is to make sure that every sick student receives prompt medical attention and suitable care. It would appear from a comparative table of the numbers of "sign-offs" during the past three years (App., p. 330) that there was an extraordinary difference in the amount of sickness in the various departments of the University. The students in Harvard College seem to be sick nearly twice as much as the students in the Lawrence Scientific School; and, curiously enough, the Special Students in these two undergraduate departments are ill much less than the regular students. Moreover, the students in the College are sick more than ten times as often as the students in the professional schools. The figures in the table in all probability do not correspond with any real facts. It is the opinion of the Medical Visitor that a large proportion of the "sign-offs" of undergraduates are uncalled for. The real disease is what soldiers call "malingering," which is a moral and not a physical disorder.

The Stillman Infirmary was in use during the year 1902-03 for the first time, and amply demonstrated its usefulness and the excellence of its appointments. 223 cases were admitted, of which 146 were discharged well, 74 were discharged relieved, two were transferred to the diphtheria ward of the Cambridge Hospital, and one remained in the Infirmary on the 30th of June last and through the summer vacation. The private-room patients numbered 89, and the ward patients 134. Of the nine operations for appendicitis at the Infirmary, four, which were urgent, were performed at night, the electric lights proving as satisfactory for surgical work as daylight.

The Infirmary had an income from funds in 1902-03 of \$3,711.92, of which \$1,949.24 was accumulated income of the Samuel Ward Fund, an accumulation not accessible again. This ancient fund (1680) has been assigned by the Corporation to the Infirmary. The receipts from students during the year were \$4,500.76; and the total cost of maintaining the Infirmary was \$11,898.61. The Robert Charles Billings Fund (1903), the income of which goes to the Infirmary, yielded interest for only part of the year—namely, the sum of \$585. Its income for the full year, if it had been in possession of the Corporation, would have been \$2,340. Good progress has therefore been made toward finding means of support for the Infirmary; but much remains to be done. Early in the year the Corporation endeavored to procure the consent of the members of the University to bear an Infirmary charge of \$4 a year, in return for which any member should be entitled to a fortnight's ward care at the Infirmary, if he were sick; but the number of students that agreed to take part in this plan was insufficient. One reason given by a considerable number of students for refusing to join in this insurance plan was that the Infirmary could not take care of them if they had chicken-pox, measles, or mumps, the last two being the commonest contagious diseases among the student population. Mr. James Stillman has now added to his first gift of \$100,000 for the Infirmary the gift of \$50,000 with which to build wards for these contagious diseases. If all the students in Cambridge were to be assessed \$4 a year, it is probable that the Infirmary could be supported on its fees with the help of the income of its present endowment, although on that plan the students would undoubtedly use the Infirmary with great freedom. That freedom is, however, desirable, because it would tend to prevent serious disease and suffering among the members of the University, and particularly among the poorer students.

The records of the Appointment Committee contain instruction on many matters which should interest students and their parents, and graduates of the University. These records are, however, much less complete than is desirable. In the first place, the number of graduates of the College who are regis-

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tered with the Committee is only about 1,700, and the great majority of these are men who desire positions, or better positions, as teachers. Now, the number of living graduates of the University is at least 15,000. Secondly, the records of the Committee are not complete in respect to the number of positions secured by Harvard graduates year by year. Even graduates recommended by the Committee secure positions without informing the Committee of their success. Institutions which inquire for teachers frequently fail to inform the office that they have employed graduates recommended by the Committee. The Committee has a record of 139 teachers' positions, away from Harvard University, which were secured by Harvard graduates in 1902-03; but their information about the majority of these places was casual and indirect, not systematic and direct. In order to make the efforts of the Committee more useful, the active coöperation of the graduates of the University, and particularly of graduates who hold positions which carry powers of appointment to places suitable for young graduates, is much to be desired. The Committee can be of service not only with regard to first appointments, but with regard to transfers and promotions. Thus far, the Committee has been of more use to universities, colleges, and private and endowed schools, than to public schools, — perhaps because positions in public schools are not regarded by Harvard graduates as sufficiently secure and independent. It is for the public interest and the interest of the University that the Appointment Committee should be enabled to supply men for positions as superintendents, principals, and sub-masters in public school systems, whether through original appointments or by transfers. The Committee could often serve public schools by suggesting the transfer to a larger place of a Harvard graduate who has already had experience in teaching; but for this purpose it is essential that the records of the older men registered in the office should be kept up to date, and this can be properly done only through the coöperation of the men themselves.

As regards the demand for teachers and the supply in the office of the Committee, the following facts are of interest: in secondary schools the personality of the candidate — that is, his bearing, address, disposition, and manners — is generally



more important than his knowledge of any particular subject. In the best-equipped schools a teacher is often required to teach more than one subject, and is not infrequently engaged to teach one subject and later given another. In small high schools a man would be required to teach nearly all of the elementary subjects. The subjects for which teachers were most sought in 1902-03 were, first, English, next mathematics, and then Latin, physics, and general science. In English, particularly in composition and debating, and in the sciences, particularly in physics, the demand far outran the supply. In philosophy, on the other hand, the demand was smaller than the supply. The salaries of inexperienced young graduates who get positions as teachers are at first smaller than the annual earnings of many mechanics, such as lithographers, plumbers, electrical workers, and masons; but the salaries of such teachers soon rise above the level of the annual earnings of mechanics in even the most skilful trades. The Committee received during the year 512 requests for teachers, several of them calling for a number of men. The demand for men of technical training is constant, and exceeds the supply. Requests for educated young men were received from several important corporations which employ thousands of men, from wholesale business houses, and from brokers, life insurance companies, and publishing houses; and some of these requests are virtually standing orders. This part of the work of the Committee might be and ought to be greatly enlarged; for a larger and larger proportion of Harvard Bachelors of Arts goes year after year into business, including in that term the service of large corporations.

The Committee not only secures places for graduates, but gets work for undergraduates who are supporting themselves, wholly or in part, while in College. Students of the College and Scientific School work during term-time in all sorts of positions, earning from twenty-five cents an hour for a few hours a week to \$1,500 or more a year. Tutoring positions in private families, secured through the Committee, often pay \$100 a month and expenses. The office is saved much work by the habit among students of passing along a good thing. A good position once put into the hands of a competent

student seldom comes back to the office to be filled; he passes it on to a friend. The Committee procures for undergraduates a considerable number of lucrative positions in summer; and this part of its work might well be increased if more clerical force were at the disposal of the Committee. For the present, it seems wise to give precedence to the more influential work of getting appropriate positions for graduates.

The Appointment Committee is but a few years old, and its work is capable of serviceable development. It was copied by Harvard from Oxford University; and has already been copied from Harvard by several American universities.

Up to the close of the year under review the Retiring Allowance Fund was more than adequate to the payment of all the retiring allowances which the Corporation had to supply; but with the opening of the present year the income of the fund became inadequate to the payment of all the retiring allowances the Corporation had voted. This valuable fund ought, therefore, to be enlarged. It amounted on the 1st of September last to \$366,416.47. The system of retiring allowances will, of course, be maintained, in spite of the fact that the income of the fund is no longer adequate. When a full professor takes his retiring allowance, his work is ordinarily taken up by the professor in the same department who is next him in standing and experience, and the final vacancy is filled by appointing an instructor. Accordingly, there might be, for several years at least, no added charge on the general treasury in such a case, although the retiring allowance were paid, not from the income of the fund, but out of unrestricted income. This principle does not apply, however, to administrative and business officers. The University staff has been so enlarged during the past ten years that, as time goes on, the income of a fund at least twice as large as the present Retiring Allowance Fund will be needed to pay from year to year the probable retiring allowances.

In the President's Report for the year 1901-02 (p. 14), it appeared that the annual expenditures of the University for museums and collections, excluding the Arnold Arboretum,

but including the Gray Herbarium and the Botanic Garden, had been for ten years past about the same, when expressed in per cent. of the total expenditure, as the annual expenditures for the University Library. If the Arboretum had been included in the group of museums and collections, the expenditures for museums would have been decidedly larger in every year than the expenditures on the Library. The University holds funds the income of which is applicable to the support of museums and collections to the amount of one and a half million dollars, including the Arboretum funds. It holds funds for the purchase of books and the support of libraries to the amount of \$710,000, including the Law School funds for the support of its library. If the buildings occupied by museums be compared with the buildings used as libraries, it appears at once that the first group is much more extensive and costly than the second. This condition of things is comparatively new ; for in 1850 there were no buildings specially devoted to museums or collections, and no funds the income of which was applicable to their support. It is noticeable that one of the earliest collections made for Harvard College — the collection of minerals — still remains without endowment for its support and enlargement. The development of the museums has been so gradual, that attention has not often been directed to this new feature in the structure and the activities of the University. The funds held for the benefit of the museums and collections now amount to about one-eleventh of the entire invested capital of the University. The University museums are not only geological, botanical, and zoölogical, but also anthropological — that is, they illustrate the arts and crafts of savage, barbarous, and civilized peoples, and therefore the history of civilization. They are created and maintained rather for the public and for the older members of the University than for the undergraduate youth. They supply what books cannot give, — the actual vision of real objects throughout a great range of human observation and experience. When skilfully arranged, they furnish types of immense numbers of sorted and classified objects, and, as it were, a representation of the world, past and present, and an epitome of the history of the earth's crust and of the **races** of plants and animals, including man. They have

become indispensable in a modern university ; but they should not be suffered to outrun the older and equally essential collections of books ; and it should always be remembered that neither museums nor libraries can replace direct teaching, — the immediate instruction of the young student by the competent master.

In the academic year 1901-02 there had been a surplus of \$10,291.11 in the account called "University, College, and Library," after paying the deficit of the Veterinary School for the year ; and in the preceding year also there had been a surplus, though a small one. Moreover, the number of students in the departments under the Faculty of Arts and Sciences showed an increase of 165 in the fall of 1902 over that of the year 1901-02 ; and this increase in the number of students represented a probable increase in the tuition-fees of more than \$20,000. In view of these facts, the Corporation, in the autumn of 1902, anticipated a good financial result for the academic year which had then begun. Consequently, during the autumn of 1902 and the spring of 1903 the Corporation made numerous promotions and new appointments, which resulted in an increase of \$43,144.59 in the salaries paid in the departments under the Faculty of Arts and Sciences, — namely, the College, Scientific School, and Graduate School. The larger part of the new expenditure went to increase the amount of instruction offered ; but a significant portion was used to improve the instruction already offered, particularly in the elementary courses resorted to by large numbers of students.

After this large increase of salaries had been made, the Corporation found themselves involved in other new expenditures to an unexpected amount. Three new buildings came into use during the year 1902-03, — the Stillman Infirmary and the Semitic Museum for the whole of the year, and the New Lecture Hall for a portion of the year. At the Stillman Infirmary the expenditures exceeded the receipts by \$3,342.42, after applying the accumulated income of the Samuel Ward Fund to the support of the Infirmary. The running expenses of the Semitic Museum were \$1,654.15 for the year. The payments

made on account of the New Lecture Hall for about half the year were \$2,390.16. The expenses incurred by the Corporation during the last half of the year in preparing the Rogers Building to receive the Germanic Museum were \$2,328.06. All four of these gifts were highly desirable; but they all caused new annual charges, and the sum of these charges was \$9,716.79. In the year 1901-02 nearly half of the debt of the abandoned School of Veterinary Medicine had been charged off; but \$10,114.90 remained to be charged off in 1902-03. The situation was made worse because two considerable funds were transferred to the Medical School Undertaking in 1902-03, the income of which had previously gone to the University account, — namely, the Robert C. Billings Fund of \$92,500, and \$350,000 from the Henry L. Pierce Bequest. The transfer of these two funds in 1902 deprived the University account of an income of \$21,264.61. During the year extensive additions were made to the telephone service of the Cambridge departments of the University; and various other improvements were made in the clerical and mechanical equipment. None of these improvements saved money; on the contrary, they all increased the running expenses. The financial result of the year was a deficit of \$40,403.07 in the combined account of the College, Scientific School, Graduate School, and Library.

This result was not known to the Corporation until the end of September, 1903; and in the spring of 1903 they had made further additions to the salary list to take effect in the academic year 1903-04. By the middle of October last it appeared that there was to be no considerable net gain for the year now current in the number of students in the departments under consideration. It was too late to check the increase in the salary list for 1903-04; so that the Corporation are obliged to face a probable deficit for the year now current, in spite of persistent efforts to reduce the current expenditures for everything not instruction. The scale of expenditure for light, heat, ventilation, cleaning, and service in the Cambridge departments of the University has never been extravagant, although it has been raised significantly during the last ten years; and it is not possible to reduce that expenditure much,

in spite of the fact that expenditures of this nature constitute a regrettably large proportion of the total expenditures of the University. The practices of fifty years ago at Harvard College in respect to ventilation would now be against the law as well as against the interests of the teachers and students; and public opinion would not now endorse the complete absence of bath-rooms from the dormitories owned by the College, an absence which occasioned very little remark down to the year 1890. It is the universal increase in the comfort of living which has caused the College to enlarge, somewhat tardily, its expenditures for the protection and comfort of its officers and students.

Although it is impracticable to prevent the recurrence of a deficit during the year now current, it is the clear duty of the Corporation to repair, as soon as possible, the mistake they made in the too large increase in the salary list for the year 1902-03. A few thousand dollars can be saved on running expenses, and a few thousand dollars more will be provided from new resources received; but it will be necessary to contract the salary list in the departments under the Faculty of Arts and Sciences by at least \$25,000 for the year 1904-05. This reduction can be made by diminishing the number of instructors and assistants annually appointed. There will result some diminution in the number of courses of instruction offered, and some redistribution of work among professors and instructors holding permanent appointments; but, in general, the reductions can be made without seriously affecting the interests of any considerable number of the undergraduates.

Whenever a deficit has occurred in the account called "University, College, and Library," it has been charged to one or other of two funds which bore no personal name and were at the complete disposal of the Corporation, principal and interest. These two funds were the Stock Account and the Insurance and Guaranty Fund. The Stock Account had come down from remote generations; the Insurance and Guaranty Fund was created in 1860. To the credit of the Stock Account it was the custom to carry the proceeds of the sale of lands and

of other anonymous pieces of property which it was not desirable to preserve as separate permanent funds. In 1827 the balance of this fund was already \$88,475.67. It reached its maximum in 1839 — namely, \$239,813.55. It disappeared from the Treasurer's accounts in 1900. The main cause of the disappearance of this fund between 1839 and 1900 is the charging to it of annual deficits. Between 1827 and 1900 deficits amounting to \$250,812.28 were charged to this fund.

The Insurance and Guaranty Fund was accumulated by crediting to it the income from certain investments in excess of 6 per cent., and a few annual surpluses in the "University, College, and Library" Account. Gains on sales of securities were sometimes credited to it previous to 1880, and the balance of the Fire Relief Fund, which was raised after the great Boston fire of 1872, was finally credited to this fund in 1879, re-enforcing it to the extent of \$122,973.10. The fund reached its maximum — \$221,736.89 — in 1877. It now stands (1st August, 1903) at \$91,885.23, so that from its highest level \$129,851.66 have disappeared. The University has, however, some visible equivalents for this diminution of a productive fund. Thus, as far back as 1862-63, certain advances made by the Corporation for Appleton Chapel, Boylston Hall, and the Old Gymnasium (Rogers Building), were charged against this fund to the amount of \$13,731.53; and the Library extension of 1876 was paid for from this fund to the amount of \$89,012.68. Moreover, the cost of the unsuccessful effort to establish a veterinary school and hospital — an experiment which extended over twenty years — was really paid out of this fund to the amount of \$49,159.67.

If we add the Stock Account at its highest level to that portion of the Insurance and Guaranty Fund which has disappeared, we find that there has disappeared from the invested capital of the University under these two heads the sum of \$369,665.21 in the course of sixty-four years. It is certain, however, that the Corporation have obtained a full equivalent in lands, buildings, and equipment for all the invested capital which has disappeared; for the annual deficits charged to these two funds have often been due to improving expenditures on grounds,

buildings, or collections. Thus, in recent years, the cost of the steam fittings and bath-rooms put into the College dormitories was charged in the annual accounts, and caused large deficits. A list of improvements to grounds, buildings, and equipment paid for out of unrestricted income and the unrestricted capital in the Stock Account and the Insurance and Guaranty Account between 1827 and 1903 will be found in the Appendix (p. 324). This list has been prepared by the Comptroller, Mr. Allen Danforth, and is accurate so far as it goes, but is known to be incomplete. To make it complete would have required a very laborious examination of the Bursar's accounts for sixty-six years.

The way in which the Insurance and Guaranty Fund was accumulated shows that it belonged to the entire University and not to any single department thereof. Before 1866 the Stock Account might have been held to belong to the College, and indeed was treated as if it were a College fund; but the change of financial policy then adopted, whereby the average rate of interest earned on all the general investments was thereafter divided equally on all funds not specially invested, really involved a new conception of the relation of the Stock Account to all the other accounts of the University. It indicated that the Stock Account might thereafter be held to belong to the entire University. Now the deficits charged to the Stock Account—charges which ultimately caused the extinguishment of the fund—were deficits in the account called “University, College, and Library.” In the expenditures called “University” the entire institution has an interest, and all the Cambridge departments have an interest in the Library; but the interest of the Schools of Divinity, Law, and Medicine in the College and Scientific School expenditures is not direct, chiefly, but indirect. They are directly interested in the undergraduate departments as feeders only, or rather as two feeders out of many.

Mr. Allen Danforth, Comptroller, has prepared a list (App., p. 326) of the successive surpluses or deficits from the year 1826–27 to the year 1902–03 inclusive, on a scheme which presents a correct account of the surpluses and deficits

consistently defined, although they are not always identical with the surpluses and deficits reported in a manner not uniform in the annual statements of the successive Treasurers. This table shows that it is only since the year 1896 that the College has really been living beyond its means. Down to that year inclusive, the sum of the successive surpluses was larger than the sum of the successive deficits. Between 1832 and 1857 there were only four years in which there was not a surplus. Financially, this period might be called successful; but it was not a period of rapid development, either in the College proper or in the University as a whole. One may also see in the list that the period during which deficits have been largest and most frequent is the period when the increase of the invested funds of the University by gift and bequest has been most rapid. There seems to be no connection between the procuring of annual surpluses and general University prosperity, or between the occurrence of deficits and University decline. It should be added, however, that the deficits have been very seldom caused by undue expansion of instruction. They have usually been caused by forced expenditures on grounds, buildings, equipment, and maintenance.

While it is unsuitable that any school or department of the University should live beyond its means, it is not possible to avoid occasional deficits, unless the Corporation abandon their policy — now of many years' standing — of spending year by year all their properly available resources. To avoid deficits invariably would mean to aim deliberately at an annual surplus, and to keep sufficient reserves to guarantee that annual surplus. This cautious policy, which is appropriate to an industrial or commercial establishment, the President and Fellows think not to be the best in an educational and charitable institution. Accordingly, they believe that the University should be conducted as a growing, changing, expanding organization, losing here but gaining there, and always turning out from year to year the largest possible immediate product of well-trained young men for the largest possible variety of intellectual work. If the general tendency of the institution is towards greater size, wealth, and usefulness, the various

departments may from time to time experience deficits, or temporary diminutions of their resources, without occasioning serious anxiety.

The attention of the Overseers is respectfully invited to the following reports of the Deans of the Faculties and Schools, and the Directors of the Scientific Establishments.

CHARLES W. ELIOT, *President.*

CAMBRIDGE, 11 January, 1904.

REPORTS OF DEPARTMENTS.

THE FACULTY OF ARTS AND SCIENCES.

TO THE PRESIDENT OF THE UNIVERSITY: —

SIR, — I have the honor of presenting a report on the work of the Faculty of Arts and Sciences for the academic year 1902-03.

Besides the President, the Faculty contained sixty-one Professors, three Associate Professors, thirty-five Assistant Professors, thirty Instructors, one Lecturer, and the Recorder, — in all one hundred and thirty-one members. Eight members were on leave of absence for the whole year, one for the first half-year, and one for the second half-year; and in the course of the year one resident member died. The number of Divisions and the number of Departments remained as in 1901-02; but the name of Division XIV was changed from "American Archaeology and Ethnology" to "Anthropology."

Instruction given in 1902-03.

With the following list of courses of instruction that were actually given under the authority of the Faculty, I print a statement of the number and the classification of the students in each course. The figures are those officially returned to the Recorder by the several instructors at the close of the academic year, and take no account of persons who, regularly or irregularly, attended the exercises and did the work of a course without being officially recognized as members of it. The abbreviations are those ordinarily used in such lists: —

COURSES OF INSTRUCTION GIVEN IN 1902-03.

Semitic Languages and History.

For Undergraduates and Graduates: —

1. DR. HAYNES. — Hebrew (elementary course).
2 Se., 1 So., 1 Fr., 1 Sc. Total 5.
12. PROFESSOR LYON. — History of Israel, political and social, to the capture of Jerusalem by the Romans. 15 Se., 11 Ju., 12 So., 2 Sp. Total 40.
16. PROFESSOR G. F. MOORE. — History of pre-Christian Hebrew Literature.
1 Se., 1 Ju., 7 Di. Total 9.
13. PROFESSOR G. F. MOORE. — History of the Hebrew Religion, with comparison of other Semitic religions. 2 Gr., 1 Se., 1 Sp., 5 Di. Total 9.

Primarily for Graduates :—

- ‡2. Professor LYON. — Hebrew (second course). Interpretation of parts of the Prophets and the Poetical Books. 1 Ju., 1 So., 3 Di. Total 5.
- ‡3 *hf.* Dr. HAYNES. — Jewish Aramaic. — Interpretation of parts of Ezra, Daniel, and the Targums. 1 Ju., 2 Di. Total 3.
- ‡3a *hf.* Dr. HAYNES. — Classical Aramaic (Syriac). — Rödiger's Chrestomathia Syriaca. The Peshitto Version of the New Testament. 1 Ju., 4 Di. Total 5.
- ‡4. Dr. HAYNES. — Assyrian. 1 Gr., 1 Se., 1 Ju., 1 So., 1 Di. Total 5.
5. Professor LYON. — Assyrian (second course). — The Chaldean Epic. Letters and Commercial Documents. 3 Di. Total 3.
- ‡7. Dr. HAYNES. — Arabic. Nuḥab al Mulah. The Thousand and One Nights. 1 Ju., 1 So., 3 Di. Total 5.
8. Dr. HAYNES. — Arabic (second course). The Moallakāt; Motenebbi; Ibn Ḥaldun; the Korān. 2 Di. Total 2.
- 20c. Professor G. F. MOORE. — Old Testament: Principles and Practice of Criticism. 2 Di. Total 2.
- 20d. Professor G. F. MOORE. — Hebrew Law. 1 Di. Total 1.

Indic Philology.*For Undergraduates and Graduates :—*

- 1a *hf.* Dr. RYDER. — Elementary Sanskrit. 2 Gr., 1 Se. Total 3.
- 1b *hf.* Dr. RYDER. — Elementary Sanskrit (continued). 1 Gr., 1 Se. Total 2.

Primarily for Graduates :—

- ‡2 *hf.* Dr. RYDER. — Advanced Sanskrit (course for rapid reading). 2 Gr. Total 2.
- ‡3 *hf.* Dr. RYDER. — Advanced Sanskrit (continued). 1 Gr. Total 1.
- ‡4 *hf.* Professor LANMAN. — Advanced Pāli. 1 Gr. Total 1.
- ‡5 *hf.* Professor LANMAN. — Advanced Pāli. 1 Gr. Total 1.
- ‡20. Professor LANMAN. — Advanced special study of selected Sanskrit works, with practice in the use of the manuscripts of the Harvard collection. 1 Gr. Total 1.

Classical Philology.*Primarily for Undergraduates :—***GREEK.**

- G. Dr. CHASE. — Course for Beginners. 1 Ju., 4 So., 3 Fr., 1 Sc., 1 Di. Total 10.
- A. Asst. Professor HARRIS and Dr. CHASE. — Homer; Attic Prose. Composition. 1 Ju., 4 So., 13 Fr., 4 Sp. Total 22.
- B. Professor H. W. SMYTH, Asst. Professors GULICK and HARRIS. — Greek Literature. Plato; Lysias; Xenophon; Elegiac, Iambic, and Lyric Poets; Euripides. Lectures on the History of Greek Literature. 3 Ju., 8 So., 57 Fr. Total 68.

E hf. Dr. CHASE. — Greek Prose Composition (first course).

1 Se., 4 So., 10 Fr. Total 15.

1. Asst. Professor HARRIS. — Greek Literature. The Period of Athenian Supremacy. Herodotus; Aeschylus; Plutarch; Thucydides; Aristophanes; Sophocles.

1 Ju., 6 So., 7 Fr. Total 14.

2. Professor J. H. WRIGHT and Asst. Professor CLIFFORD H. MOORE. — Greek Literature. Aristophanes; Thucydides; Aeschylus; Sophocles.

1 Se., 7 Ju., 18 So. Total 26.

3 *hf.* Asst. Professor HARRIS. — Greek Prose Composition (second course).

1 Gr., 1 Se., 8 Ju., 6 So. Total 16.

LATIN.

A. Dr. W. W. BAKER. — Cicero; Virgil. Composition.

7 So., 20 Fr., 5 Sp., 2 Sc. Total 34.

B. Professor HOWARD, Associate Professor C. P. PARKER, Asst. Professor CLIFFORD H. MOORE, and Dr. E. K. RAND. — Latin Literature. Livy; Horace; Terence.

2 Ju., 9 So., 184 Fr., 6 Sp. Total 151.

E hf. Dr. E. K. RAND. — Latin Composition (first course). Translation of English narrative.

1 Gr., 2 Se., 11 So., 12 Fr. Total 26.

1. Professor MINTON WARREN and Associate Professor C. P. PARKER. — Latin Literature. Tacitus; Horace; Catullus.

3 Ju., 27 So., 1 Fr., 1 Sp. Total 32.

2. Associate Professor C. P. PARKER and Dr. E. K. RAND. — Latin Literature. General View of Latin Poetry.

1 Ju., 10 So. Total 11.

3 *hf.* Professor HOWARD. — Latin Composition (second course).

1 Gr., 1 Se., 9 Ju., 7 So., 1 Sp. Total 19.

For Undergraduates and Graduates:—

GREEK.

6. Professor H. W. SMYTH and Asst. Professor GULICK. — Greek Literature. Demosthenes; Aeschines; Aeschylus; Sophocles; Aristophanes.

1 Gr., 4 Se., 10 Ju., 1 So. Total 16.

7 *hf.* Professor J. H. WRIGHT. — Greek Prose Composition (third course).

6 Gr., 7 Se. Total 13.

9. Asst. Professor ROPES. — Introduction to the Study of the New Testament.

1 Se., 4 Ju., 1 So., 7 Di. Total 13.

8. Professor J. H. WRIGHT. — Greek Philosophy. Plato; Aristotle.

4 Gr., 10 Se. Total 14.

17 *hf.* Asst. Professor HARRIS. — Greek Literature. Four Plays, with studies of their influence in Art and in the Drama of later ages. For 1902-03: Aeschylus, Sophocles, Euripides, Aristophanes.

1 Gr., 11 Se., 4 Ju., 1 So. Total 17.

10. Asst. Professor GULICK. — The Life of the Ancient Athenians, described and illustrated by the aid of the Literature and of the Monuments.

2 Gr., 31 Se., 22 Ju., 9 So., 4 Sp., 11 Sc. Total 79.

11. Professor J. W. WHITE. — The History of the Greek Drama. Lectures on the Dramatic Art and Literature of the Greeks, with reading and study of the extant plays of the Greek dramatists.

3 Gr., 12 Se., 4 Ju., 1 So., 1 Sp., 1 Sc. Total 22.

LATIN.

6. Professor HOWARD. — Latin Literature. Suetonius; Pliny; Juvenal; Martial. 1 Gr., 3 Se., 17 Ju. Total 21.
- 13 ²/_{hf}. Dr. W. W. BAKER. — Latin Literature. The Elegiac Poets. 2 Se., 1 So. Total 3.
- 7 ¹/_{hf}. Associate Professor C. P. PARKER. — Latin Composition (third course). 5 Gr., 7 Se. Total 12.
8. Professors MINTON WARREN and MORGAN. — Latin Literature. Plautus; Cicero; Lucretius. 2 Gr., 10 Se., 2 Ju., 1 Sp. Total 15.
15. Professor MORGAN, and Drs. E. K. RAND and W. W. BAKER. — The Works of Virgil, with studies of his Sources and of his Literary Influence from his own times to the Renaissance. 4 Gr., 4 Se., 1 Ju. Total 9.

Primarily for Graduates: —

CLASSICAL PHILOLOGY.

25. Asst. Professor CLIFFORD H. MOORE. — Proseminary. Introduction to the methods of Criticism and Research, with special reference to the textual criticism and interpretation of Classical Authors. 11 Gr., 1 Se. Total 12.
- 73 ²/_{hf}. Professor H. W. SMYTH. — The Greek Epigram. 4 Gr. Total 4.
- ‡66 ¹/_{hf}. Professor GOODWIN. — Aeschylus (Agamemnon and Eumenides). 9 Gr., 4 Se., 3 R. Total 16.
38. Professor J. W. WHITE. — The Comedies of Aristophanes. 14 Gr., 1 Se., 1 Ju. Total 16.
- ‡44. Professor H. W. SMYTH. — Thucydides. 5 Gr., 1 R. Total 6.
- ‡27 ¹/_{hf}. Professor GOODWIN. — Aristotle (Politics and parts of the Constitution of Athens). 5 Gr. Total 5.
- 54 ²/_{hf}. Asst. Professor ROPES. — The Acts of the Apostles. 1 Sp. Total 1.
68. Professor MINTON WARREN. — The Comedies of Plautus. 10 Gr. Total 10.
- 45 ¹/_{hf}. Professor MORGAN. — The Early Career of Cicero, from its outset to the end of the prosecution of Verres. 3 Gr. Total 3.
- ‡46 ²/_{hf}. Asst. Professor H. E. BURTON (Dartmouth College). — Livy. 5 Gr., 1 Se., 2 R. Total 8.
- ‡39 ¹/_{hf}. Associate Professor C. P. PARKER. — Seneca's Philosophy, Science, Ethics, and Descriptions of Roman Life. 1 Gr., 1 So., 1 R. Total 3.
- ‡70 ¹/_{hf}. Professor C. D. BUCK (University of Chicago). — General Introduction to Indo-European Philology. 11 Gr., 1 Se., 1 R. Total 13.
- ‡71 ¹/_{hf}. Professor C. D. BUCK (University of Chicago). — Outlines of the Comparative Grammar of Greek and Latin (Sounds and Inflections). 10 Gr., 1 R. Total 11.

- 21 ¹/_hf. Professor H. W. SMYTH. — Introduction to Greek Epigraphy. 8 Gr. Total 8.
- 63 ¹/_hf. Professor MINTON WARREN. — Introduction to Latin Epigraphy. 7 Gr., 1 R. Total 8.
- 58 ¹/_hf. Professor MINTON WARREN. — Introduction to Latin Palaeography. 6 Gr. Total 6.
- 29 ¹/_hf. Asst. Professor CLIFFORD H. MOORE. — The Religion and Worship of the Greeks. 5 Gr., 2 R. Total 7.
- 53 ¹/_hf. Asst. Professor GULICK. — Greek Mythology. 1 Gr., 1 Se., 1 Ju. Total 3.
- 26 ¹/_hf. Professor MORGAN. — The Private Life of the Romans (second course). Investigation of special topics. 1 Gr. Total 1.
- 67 ¹/_hf. Professor J. H. WRIGHT. — Pausanias, with special reference to the Monuments of Delphi and Olympia. 3 Gr. Total 3.
- 72 ¹/_hf. Asst. Professor H. E. BURTON (Dartmouth College). — The Topography of Rome. 4 Gr., 1 R. Total 5.

20. THE SEMINARY OF CLASSICAL PHILOLOGY.

Professors MORGAN and HOWARD, Directors for 1902-03. — Training in philological criticism and research. Text-criticism and interpretation of Greek and Latin authors: for 1902-03, Antiphon and Suetonius.

6 Gr. Total 6.

English.

Primarily for Undergraduates: —

- A. Professors A. S. HILL and BRIGGS. Asst. Professor HURLBUT, Mr. COPELAND, Drs. HOYT and TUPPER, Messrs. NUTTER, NOYES, REYNOLDS, ELLS, UTTER, RIDEOUT, SILLS, and AYDELOTTE. — Rhetoric and English Composition. 7 So., 443 Fr., 35 Sp., 144 Sc., 2 Bu. Total 631.
- BChf. Messrs. T. HALL and HALE. — English Composition. 1 Ju., 4 So., 75 Sc. Total 80.
31. Asst. Professor GARDINER, and Messrs. E. H. WELLS and STANTON. — English Composition. 3 Se., 9 Ju., 41 So., 20 Fr., 10 Sp., 2 Sc., 1 Bu. Total 86.
22. Professor BRIGGS, Dr. TUPPER, Messrs. NUTTER, RIDEOUT, FREUND, ARENSBERG, and HALE. — English Composition. 1 Gr., 17 Se., 39 Ju., 168 So., 50 Fr., 10 Sp., 13 Sc. Total 298.
- 36 ¹/_hf. Mr. COBB, Dr. TUPPER, Messrs. ARENSBERG and HALE. — English Composition. 6 Se., 4 Ju., 40 So., 23 Fr., 5 Sc., 1 Me. Total 79.
- 28 ¹/_hf. Professors A. S. HILL, BRIGGS, and KITTREDGE, Asst. Professor BAKER, and Messrs. T. HALL and J. G. HART. — English Literature. History and Development of English Literature in outline. 133 Fr., 6 Sp. Total 139.
18. Asst. Professor BAKER, and Messrs. T. HALL, CARLETON, and STOCKTON. — The Forms of Public Address. 21 Se., 52 Ju., 45 So., 4 Sp., 1 Sc. Total 123.
- 30 ¹/_hf. Asst. Professor BAKER and Mr. CARLETON. — Debating. 20 Se., 24 Ju., 3 So., 1 Sp., 1 Sc. Total 49.
- 10 ¹/_hf. Messrs. WINTER, HILLS, and WILLARD. — Public Speaking. 9 Se., 21 Ju., 29 So., 1 Fr., 2 Sp., 5 Sc. Total 67.

For Undergraduates and Graduates :—

- 3a ¹hf. Asst. Professor SCHOFIELD. — Anglo-Saxon.
15 Gr., 4 Se., 3 Ju., 3 So., 2 Sp. Total 27.
- 43 ²hf. Professor KITTREDGE. — The English Language. Studies in the Sources and History of the English Vocabulary.
7 Gr., 11 Se., 9 Ju., 7 So., 4 Sp., 1 Sc. Total 39.
1. Asst. Professor F. N. ROBINSON and Dr. NEILSON. — English Literature. Chaucer.
13 Gr., 6 Se., 2 Ju., 3 So. Total 24.
35. Asst. Professor GARDINER. — English Literature. The English Bible.
4 Gr., 5 Se., 14 Ju., 5 So., 1 Fr., 1 Sp. Total 30.
- 9 ²hf. Asst. Professor FLETCHER. — English Literature. Spenser.
4 Gr., 10 Se., 4 Ju., 1 So., 2 Sp. Total 21.
2. Professor KITTREDGE. — English Literature. Shakspeare (six plays).
22 Gr., 25 Se., 23 Ju., 38 So., 1 Fr., 4 Sp., 3 Sc., 1 Di. Total 117.
- 11a ¹hf. Dr. NEILSON. — English Literature. Bacon.
4 Gr., 13 Se., 12 Ju., 5 So., 1 Fr., 1 Sp., 1 Sc. Total 37.
- 11b ²hf. Dr. NEILSON. — English Literature. Milton.
7 Gr., 12 Se., 23 Ju., 25 So., 5 Fr., 4 Sp., 5 Sc. Total 81.
- 42a ¹hf. Asst. Professor SCHOFIELD and Mr. TATLOCK. — The Literary History of England from the Norman Conquest to Chaucer.
8 Gr., 30 Se., 19 Ju., 27 So., 4 Fr., 2 Sc. Total 90.
- 42b ²hf. Asst. Professor SCHOFIELD and Mr. TATLOCK. — The Literary History of England from Chaucer to Elizabeth.
10 Gr., 22 Se., 16 Ju., 36 So., 5 Fr., 3 Sp., 4 Sc. Total 96.
- 32a ²hf. Dr. NEILSON and Mr. REYNOLDS. — English Literature of the Elizabethan Period. From Tottel's Miscellany to the death of Spenser (1557–1599).
10 Gr., 14 Se., 12 Ju., 27 So., 7 Fr., 4 Sp., 1 Sc. Total 75.
- 7a ¹hf. Mr. COBB and Mr. HALE. — English Literature of the Period of Queen Anne. From the death of Dryden to the death of Swift (1700–1745).
2 Gr., 31 Se., 17 Ju., 27 So., 5 Fr., 3 Sp., 3 Sc. Total 88.
- 7b ²hf. Dr. MAYNADIER and Mr. WELLS. — English Literature. From the death of Swift to the publication of the Lyrical Ballads (1745–1798).
5 Gr., 26 Se., 20 Ju., 53 So., 3 Fr., 7 Sp., 1 Sc. Total 115.
- 8a ¹hf. Asst. Professor FLETCHER and Mr. NUTTER. — English Literature. From the publication of the Lyrical Ballads to the death of Scott (1798–1832).
3 Gr., 27 Se., 13 Ju., 21 So., 2 Fr., 4 Sp., 2 Sc. Total 72.
- 34 hf. Mr. COPELAND and Mr. REYNOLDS. — English Literature. English Letter Writers.
9 Se., 11 Ju., 28 So., 3 Sp., 4 Sc. Total 55
- 5a ¹hf. Professor A. S. HILL and Dr. MAYNADIER. — English Composition (advanced course).
9 Gr., 13 Se., 7 Ju., 3 So., 1 Sp. Total 33.

Primarily for Graduates :—

- 19 ²hf. Asst. Professor F. N. ROBINSON. — Historical English Grammar.
7 Gr. Total 7.
- 16 hf. Professor BRIGGS. — History and Principles of English Versification.
5 Gr., 3 Se., 4 Ju., 1 So., 3 Sp. Total 16.

- 35 ¹/₂f. Professor KITTREDGE. — Anglo-Saxon. *Béowulf*.
15 Gr., 2 Se., 3 Ju., 2 Sp. Total 22.
4. Asst. Professor F. N. ROBINSON and Dr. NEILSON. — Early English. English Literature from 1200 to 1450. 9 Gr. Total 9.
- 21 ¹/₂f. Professor KITTREDGE. — Early English. The Metrical Romances.
6 Gr. Total 6.
14. Asst. Professor BAKER. — English Literature. The Drama from the Miracle Plays to the Closing of the Theatres. 11 Gr., 6 Se., 5 Ju. Total 22.
- 29 ¹/₂f. Asst. Professor BAKER. — English Literature. The Drama in England from 1642 to 1900. 8 Gr., 9 Se., 6 Ju., 3 So., 2 Sp. Total 28.
- 24 ¹/₂f. Professor A. S. HILL. — English Literature. Studies in the Poetry of the Nineteenth Century. 4 Gr., 8 Se., 2 Sp. Total 14.

Germanic Languages and Literatures.

GERMAN.

Primarily for Undergraduates: —

- A. Drs. BIERWIRTH, COAR, and SKINNER, and Messrs. LAWRENCE, W. H. REED, STURTEVANT, WERNAER, DUBÉE, and GROSSMANN. — Elementary Course.
3 Gr., 6 Se., 7 Ju., 17 So., 272 Fr., 19 Sp., 19 Sc., 1 Di. Total 344.
- D. Drs. BIERWIRTH, SKINNER, and KULLMER. — Elementary Course.
4 Fr., 61 Se., 1 Bu. Total 66.
- B. Mr. W. G. HOWARD and Dr. JESSEN. — Elementary Course (5 times a week, counting as two courses). 4 So., 30 Fr., 4 Sp. Total 38.
- C. Drs. COAR, WALZ, and SKINNER. — German Prose and Poetry
1 Gr., 2 Se., 3 Ju., 6 So., 54 Fr., 3 Sp., 5 Sc. Total 74.
- 1a. Drs. WALZ and COAR. — German Prose and Poetry.
1 Gr., 1 Se., 3 Ju., 43 So., 1 Fr., 1 Sp., 1 Sc., 1 Di. Total 52.
- 1b. Dr. SKINNER. — German Prose. Subjects in History and Biography.
1 Gr., 4 Ju., 20 So., 3 Fr., 3 Sp., 2 Sc. Total 33.
- 1c. Dr. JESSEN and Mr. SEIBERTH. — German Prose, narrative and descriptive.
3 Ju., 13 So., 6 Fr., 2 Sp., 31 Sc., 1 Bu. Total 56.
- Fhf. Dr. KULLMER. — Practice in speaking and writing German (first course).
2 Se., 5 Ju., 12 So., 9 Fr. Total 28.
- Hhf. Dr. BIERWIRTH. — Practice in speaking and writing German (second course).
1 Gr., 1 Se., 1 Ju., 5 So., 2 Fr. Total 10.
- 2a. Mr. W. G. HOWARD and Dr. JESSEN. — Introduction to German Literature of the Eighteenth and Nineteenth Centuries. Lessing, Goethe, and Schiller; German Ballads and Lyrics.
1 Gr., 3 Se., 7 Ju., 16 So., 20 Fr. Total 47.
- 2b. Professor H. S. WHITE and Dr. KULLMER. — Introduction to German Literature of the Eighteenth and Nineteenth Centuries. Selections from the works of Lessing, Goethe, and Schiller; German Ballads and Lyrics.
2 Se., 11 Ju., 26 So., 20 Fr. Total 59.
- 3 Dr. BIERWIRTH. — Schiller and his Contemporaries. Lessing; Schiller; Goethe. 1 Se., 10 Ju., 8 So., 8 Fr. Total 27.
4. Professor VON JAGEMANN. — Goethe and his Time.
11 Ju., 6 So., 9 Fr., 1 Sc. Total 27.

GERMAN LITERATURE.

For Undergraduates and Graduates :—

- 25 *hf.* Professor FRANCKE and Mr. BUSSE. — History of German Literature in Outline. 1 Gr., 3 Se., 14 Ju., 19 So., 2 Fr., 1 Sp., 3 Sc. Total 43.
5. Professor FRANCKE and Mr. BUSSE. — German Literature of the Classic Period of the Eighteenth Century. 4 Gr., 2 Se., 4 Ju., 22 So., 1 Sp. Total 33.
- 26a *hf.* Mr. W. G. HOWARD. — German Literature in the first half of the Nineteenth Century. Kleist; Uhland; Heine. 3 Se., 4 Ju., 5 So., 1 Sp. Total 13.
- 26b *hf.* Mr. W. G. HOWARD. — German Literature in the second half of the Nineteenth Century. The Development of the Novel and the Drama. 1 Gr., 2 Se., 5 Ju., 5 So., 1 Sp. Total 14.
27. Professor H. S. WHITE. — Goethe's and Schiller's Minor Poems; with some examination of the sources and of the relation of the poems to the life and intellectual development of each author. 1 Gr., 1 Ju., 1 So., 1 Sp. Total 4.
29. Professor H. S. WHITE. — The Life and Writings of Richard Wagner; selections from the texts of Richard Wagner's musical dramas, including *Der Fliegende Holländer*, *Tannhäuser*, *Lohengrin*, *Tristan und Isolde*, *Die Meistersinger*, *Der Ring des Nibelungen*, and *Parsifal*, with some study of the legendary background, and with illustrations and elucidations from Wagner's other writings. 1 Se., 4 Ju., 4 So., 1 Sp. Total 10.
8. Dr. WALZ. — German Literature in the Twelfth and Thirteenth Centuries. *Nibelungenlied*; *Kudrun*; *Hartmann*; *Wolfram*; *Walther von der Vogelweide*. Translation into modern German. 4 Gr., 1 Se., 1 Ju., 2 So. Total 8.

Primarily for Graduates :—

- ‡11a *hf.* Professor FRANCKE. — The early Romantic Movement in Germany, with special reference to its social and political aspects; Novalis; the brothers Schlegel; Tieck. 9 Gr., 5 R. Total 14.

SCANDINAVIAN LITERATURE.

For Undergraduates and Graduates :—

1. Asst. Professor SCHOFIELD. — Modern Danish and Norwegian Literature. Holberg, Oehlenschläger, Ibsen, Björnson, and other writers. Practice in the spoken language. Lectures on the history of Scandinavian Literature. 1 Gr., 1 Se., 1 Ju., 3 So., 1 Sp., 1 Di. Total 8.

GERMANIC PHILOLOGY.

Primarily for Graduates :—

- ‡12a *hf.* Professor VON JAGEMANN. Gothic. Introduction to the study of Germanic Philology. General Introduction and Phonology. 17 Gr., 1 Di., 2 R. Total 20.
- ‡12b *hf.* Professor VON JAGEMANN. — Introduction to the study of Germanic Philology (continued). Morphology, Etymology. 4 Gr., 1 Di. Total 5.

- ‡14 ¹/₂ Dr. BIERWIRTH. — Old Saxon. Introduction to Germanic Metrics.
6 Gr. Total 6.
- ‡15 ¹/₂ Dr. WALZ. — Old High German.
7 Gr. Total 7.
- ‡21. Professor VON JAGEMANN. — History of the German Language.
3 Gr. Total 3.

SEMINARY COURSES IN GERMANIC LANGUAGES AND LITERATURES.

Primarily for Graduates : —

- ‡20a. Professor VON JAGEMANN. — Luther's German Writings.
4 Gr., 1 R. Total 5.
- ‡20c. Professor FRANCKE. — Topics in the German Romantic Movement.
10 Gr. Total 10.

Romance Languages and Literatures.

FRENCH.

Primarily for Undergraduates : —

- A. Asst. Professor C. H. C. WRIGHT, assisted by Messrs. MORRISON and MYRIOK.
Elementary Course.
2 Gr., 3 Se., 2 Ju., 9 So., 64 Fr., 12 Sp., 31 Sc., 2 Bu. Total 125.
- 1c. Mr. MORLEY, assisted by Mr. WHITEM. — Reading, translation, grammar,
and composition. 8 So., 2 Fr., 2 Sp., 38 Sc. Total 50.
- 1b. Asst. Professor BABBITT and Mr. MORLEY. — French Prose, historical and
general. Translation from French into English.
1 Gr., 4 Ju., 30 So., 61 Fr., 1 Sp., 1 Sc. Total 98.
- 1a. Associate Professor DE SUMICHEAST and Mr. BRUN. — Reading, translation,
grammar, and composition.
1 Gr., 1 Ju., 17 So., 28 Fr., 2 Sp., 1 Sc. Total 50.
- 2c. Asst. Professor MARCOU, Dr. M. A. POTTER, and Mr. MORLEY, assisted by
Messrs. N. F. HALL and WHITEM. — French Prose and Poetry. Corneille;
Racine; Molière; Beaumarchais; Lamartine; Victor Hugo; Alfred de
Musset; Balzac. Composition.
1 Se., 13 Ju., 41 So., 93 Fr., 5 Sp., 11 Sc. Total 164.
- 2a. Asst. Professors C. H. C. WRIGHT and BABBITT, and Mr. LA MESLÉE. —
French Prose and Poetry. Corneille; Racine; Molière; Victor Hugo;
George Sand; Alfred de Musset; Sainte-Beuve. Composition.
1 Se., 9 Ju., 32 So., 70 Fr., 2 Sp., 4 Sc. Total 118.
- 3hf. Messrs. BRUN and LA MESLÉE. — Practice in speaking and writing
French (elementary course).
7 Ju., 33 So., 11 Fr., 5 Sc. Total 56.
- 4hf. Mr. BRUN. — Practice in speaking and writing French (intermediate
course). 1 Gr., 2 Se., 11 Ju., 15 So., 10 Fr., 3 Sp., 2 Sc. Total 44.
- 5hf. Mr. BRUN. — Practice in speaking and writing French (advanced course).
3 Se., 3 Ju., 5 So., 1 Fr., 1 Sc. Total 13.

For Undergraduates and Graduates : —

- 6c. Professor GRANDGENT. — General view of French Literature (course con-
ducted in English). 2 Gr., 5 Se., 11 Ju., 15 So., 1 Fr., 1 Sc. Total 35.

6. Associate Professor DE SUMICHRASST and Mr. BRUN. — General view of French Literature (course conducted in French).
2 Se., 5 Ju., 22 So., 1 Fr., 1 Sp. Total 31.
14. Asst. Professor MARCOU. — French Lyric Poetry from Villon and the Fifteenth Century to the present time.
2 Gr., 1 Se., 1 So. Total 4.
18. Associate Professor DE SUMICHRASST and Mr. LA MESLÉE. — French Life in the Seventeenth and Eighteenth Centuries, described and illustrated by the literature and works of art (course conducted in English).
15 Se., 19 Ju., 21 So., 3 Fr., 1 Sp., 7 Sc. Total 66.
- 7a ¹/₂f. Associate Professor DE SUMICHRASST. — French Literature in the First Half of the Nineteenth Century. Victor Hugo and the Romanticist movement (course conducted in French). 3 Gr., 9 Se., 3 Ju., 1 So. Total 16.
- 7b ³/₄f. Associate Professor DE SUMICHRASST. — French Literature in the Second Half of the Nineteenth Century. Victor Hugo and the reaction against the Romanticist movement (course conducted in French).
3 Gr., 9 Se., 3 Ju., 1 Sp. Total 16.
10. Asst. Professor C. H. C. WRIGHT. — French Literature in the Sixteenth Century (course conducted in French). 3 Se., 3 Ju., 1 Sp. Total 7.

ITALIAN.

Primarily for Undergraduates: —

1. Asst. Professor FORD, assisted by Mr. CAPOTOSTO. — Elementary Course.
1 Gr., 8 Se., 14 Ju., 11 So., 10 Fr., 1 Sp., 1 Sc. Total 46.

For Undergraduates and Graduates: —

2. Mr. MYRICK. — Literature of the Fifteenth and Sixteenth Centuries. Torquato Tasso, Ariosto, Machiavelli, Benvenuto Cellini.
2 Se., 1 Ju., 1 So., 1 Sp. Total 5.
10. Professor GRANDGENT. — The Works of Dante, particularly the Vita Nuova and the Divine Comedy. 4 Gr., 2 Se., 1 Ju. Total 7.

SPANISH.

Primarily for Undergraduates: —

1. Asst. Professor FORD, Mr. LA MESLÉE, Dr. M. A. POTTER, and Mr. MORLEY, assisted by Mr. N. F. HALL. — Elementary Course.
1 Gr., 9 Se., 18 Ju., 33 So., 37 Fr., 2 Sp., 8 Sc. Total 108.

For Undergraduates and Graduates: —

5. Asst. Professor FORD. — Spanish Prose and Poetry of the Nineteenth Century. Composition. 5 Se., 5 Ju., 6 So., 1 Fr., 2 Sp. Total 19.
2. Asst. Professor MARCOU. — Literature of the Sixteenth and Seventeenth Centuries. Cervantes; Lope de Vega; Calderón.
2 Se., 2 Ju., 1 So. Total 5.

Primarily for Graduates: —

3. Asst. Professor FORD. — Early Spanish. — The Poem of the Cid. Spanish Literature to the Fifteenth Century. 6 Gr., 2 Se., 1 So. Total 9.

ROMANCE PHILOLOGY.

Primarily for Graduates : —

3. Professor SHELDON. — Old French. Phonology and inflections. The oldest texts. *La Chanson de Roland*; *Chrétien de Troyes*; *Aucassin et Nicolette*. 17 Gr., 2 Se., 1 Ju. Total 20.
4. Professor GRANDGENT and Dr. M. A. POTTER. — Provençal. Language and literature, with selections from the Poetry of the Troubadours. 6 Gr., 1 So. Total 7.
- 5 ¹/₂ f. Professor GRANDGENT. — Low Latin. 5 Gr. Total 5.
7. Professor SHELDON. — Anglo-French and the French Element in English. 1 Ju. Total 1.

Comparative Literature.

For Undergraduates and Graduates : —

1. Dr. M. A. POTTER. — The History of Latin Literature in the Middle Ages (beginning with the Fourth Century), and its relations to Ancient and Modern Literature. 1 Gr. Total 1.
2. Professor SHELDON. — Mediaeval Literature in the vulgar tongues, with especial reference to the influence of France and Provence. 1 Gr., 1 Se., 1 So. Total 3.
3. Asst. Professor FLETCHER. — Tendencies of European Literature during the Renaissance. 4 Gr., 3 Se. Total 7.

Primarily for Graduates : —

12. Asst. Professor BABBITT. — Literary Criticism since the Sixteenth Century. 2 Gr., 1 Se. Total 3.

COURSE OF SPECIAL STUDY.

20. An opportunity was afforded to competent Graduate Students to pursue, under the guidance of instructors, original investigation in special topics. 1 Gr. Total 1.

Celtic.

Primarily for Graduates : —

- 1 ¹/₂ f. Asst. Professor F. N. ROBINSON. — Old Irish. General introduction to Celtic Philology. 1 Gr. Total 1.

Slavic Languages.

For Undergraduates and Graduates : —

- 1a. Asst. Professor WIENER. — Russian. 2 Gr., 2 Se., 1 Jr., 2 So. Total 7.
- 1b. Asst. Professor WIENER. — Russian. Literature of the Nineteenth Century. Pushkin, Gogol, Turgenev, Tolstoy. Composition. 3 Gr. Total 3.
- 4 ¹/₂ f. Asst. Professor WIENER. — Introduction to the History of Russian Literature. Lectures in English, and collateral reading of representative works. 3 Se., 8 Ju., 17 So., 2 Fr., 1 Sp., 4 Sc. Total 35.

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HISTORY.

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1. Asst. Professor COOLIDGE, and Messrs. FRYER, SHIPMAN, CAROT, and LELAND. — Mediaeval and Modern European History (introductory course). 2 Jr., 56 So., 395 Fr., 19 Sp., 16 Sc. Total 488.

For Undergraduates and Graduates:—

3. Professor HASKINS. — History of Rome to the Reign of Diocletian.
3 Gr., 2 Ju., 1 So. Total 6.
4. Professor HASKINS. — History of Mediaeval Institutions. 4 Gr. Total 4.
6. Professor EMERTON. — General Church History to the End of the Seventeenth Century. 2 Gr., 2 Se., 3 Ju., 1 Sp., 10 Di. Total 18.
8. Professor GROSS. — History of France to the Reign of Francis I.
2 Gr., 1 Ju., 4 So., 1 Sc. Total 8.
9. Professor GROSS. — Constitutional History of England to the Sixteenth Century. 8 Gr., 10 Se., 12 Ju., 2 So., 3 Sp. Total 35.
11. Dr. MERRIMAN. — History of England during the Tudor and Stuart Periods. 12 Gr., 18 Se., 19 Ju., 14 So., 1 Sc. Total 64.
- 12a ¹hf. Professor MACVANE and Mr. SHEARER. — English History from the Revolution of 1688 to the Reform of Parliament.
3 Gr., 43 Se., 16 Ju., 22 So., 1 Fr., 4 Sp., 2 Sc. Total 91.
- 12b ²hf. Professor MACVANE and Mr. SHEARER. — English History since the Reform of Parliament.
2 Gr., 17 Se., 19 Ju., 24 So., 2 Fr., 3 Sp., 3 Sc., 1 Di. Total 71.
- 16a ¹hf. Professor MACVANE and Mr. H. H. MORSE. — History of Continental Europe from the Peace of Utrecht to the Fall of Napoleon I.
6 Gr., 22 Se., 31 Ju., 80 So., 3 Fr., 5 Sp., 2 Sc. Total 149.
- 16b ²hf. Professor MACVANE and Mr. H. H. MORSE. — History of Continental Europe since the Fall of Napoleon I.
3 Gr., 14 Se., 29 Ju., 84 So., 4 Fr., 2 Sp., 1 Sc. Total 137.
- 29 ³hf. Dr. MERRIMAN. — Spanish History to the Death of Philip II.
10 Se., 21 Ju., 34 So., 7 Fr., 2 Sp., 2 Sc. Total 76
15. Asst. Professor COOLIDGE. — History of North-Eastern Europe (Denmark, Sweden, Poland, Russia) from 1453 to 1795.
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10. Professor CHANNING, assisted by Mr. KIMBALL. — American History to 1783.
5 Gr., 17 Se., 38 Ju., 109 So., 8 Fr., 5 Sp., 4 Sc., 1 Di. Total 187.
13. Professor CHANNING, assisted by Messrs. CUSHING and DORMAN. — Constitutional and Political History of the United States (1783–1865).
4 Gr., 39 Se., 95 Ju., 56 So., 9 Sp., 6 Sc. Total 209.

Primarily for Graduates:—

- †17 hf. Professor J. H. WRIGHT. — Introduction to Greek Constitutional History.
4 Gr., 2 R. Total 6.
21. Professor HASKINS. — Introduction to the Sources of Mediaeval History.
1 Gr. Total 1.
25. Asst. Professor COOLIDGE. — General History of Russia (advanced course).
2 Gr. Total 2.
26. Professor EMERTON. — History of Christian Thought, considered in its relation to the prevailing philosophy of each period, from the earliest times to the Eighteenth Century. 2 Gr., 1 Ju., 8 Di. Total 11.

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- 20d. Asst. Professor COOLIDGE. — Recent History of Europe. 3 Gr. Total 3.
 20e. Professor CHANNING. — American History and Institutions.
 7 Gr., 1 So., 1 Law, 1 Di. Total 10.

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 2 Gr., 31 Se., 32 Ju., 12 So., 1 Sp., 1 Sc., 1 Law. Total 80.
 16a¹/₂f. Mr. C. S. HAMLIN, and Messrs. F. M. ROBERTS, DORETY, T. P. HILL, and HEILBORN. — Administration of the Government of the United States.
 5 Gr., 178 Se., 192 Ju., 25 So., 11 Sp., 19 Sc., 1 Law. Total 431.
 16b¹/₂f. Mr. F. J. STIMSON, and Messrs. F. M. ROBERTS, DORETY, T. P. HILL, and HEILBORN. — Tendencies of American Legislation.
 3 Gr., 120 Se., 154 Ju., 52 So., 10 Sp., 15 Sc. Total 354.

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 9 Gr., 6 Se., 9 Ju., 1 So., 1 Sp. Total 26.
 14. Professor GRAY. — Constitutional Law in the United States.
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COURSE OF RESEARCH.

- 20a. Professor MACVANE. — Municipal Government.
 2 Gr., 2 Se., 1 So., 1 R. Total 6.

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 3. Professors CARVER and RIPLEY. — Principles of Sociology. Theories of Social Progress.
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6 Gr., 1 Se., 2 Ju., 6 So., 1 Sp. Total 16.
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17. PROFESSOR RIPLEY and MR. MEYER. — The Economic Organization and Resources of European Countries.
2 Gr., 2 Se., 3 Ju., 1 So., 1 Sc. Total 9.
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12. Asst. Professor SANTAYANA. — Greek Philosophy, with especial reference to Plato. 7 Gr., 10 Se., 4 So., 2 Sp., 2 Di. Total 25.
- 11a ¹hf. Dr. PERRY. — Descartes, Spinoza, and Leibnitz. 2 Gr., 6 Se., 2 Sp. Total 10.
- 11b ²hf. Dr. PERRY. — The History of English Philosophy from Locke to Hume. 3 Gr., 7 Se., 4 Ju., 3 So., 1 Fr., 4 Sp. Total 22.
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1b. Professor H. L. WARREN, assisted by Mr. LORCH. — Technical and Historical Development of the Mediaeval Styles of Architecture.

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- 3a. Professor H. L. WARREN, assisted by Mr. SWAN. — Freehand Drawing.
1 Gr., 1 Se., 11 Sc. Total 13.
- 3b. Professor H. L. WARREN, assisted by Mr. SWAN. — Freehand Drawing
(second course). 1 Gr., 1 Se., 12 Sc. Total 14.
- 3c. Professor H. L. WARREN and Mr. NEWTON. — Freehand Drawing (third
course). 2 Gr., 5 Sc. Total 7.
- 4a. Professor H. L. WARREN and Mr. NEWTON, assisted by Mr. SWAN. —
Elementary Architectural Design.
1 Gr., 1 Se., 1 So., 8 Sc., 1 Bu. Total 12.
- 4b. Professor H. L. WARREN and Mr. NEWTON. — Architectural Design (second
course). 1 Gr., 5 Sc. Total 6.
- 4c. Professor H. L. WARREN and Mr. NEWTON. — Architectural Design
(third course). 4 Sc. Total 4.
- 5th Messrs. NEWTON and SWAN. — Building Construction: Carpentry.
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- 6th Mr. GARBUTT. — Modelling. 1 Gr., 5 Sc. Total 6.
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Design (Balance, Rhythm, Harmony).
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Primarily for Graduates: —

- 4d. Professor H. L. WARREN and Mr. NEWTON. — Architectural Design
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3. Messrs. OLMSTED and SHURTLEFF, assisted by Mr. PRAY. — Practice in
Landscape Design (second course). 2 Sc., 1 Bu. Total 3.

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For Undergraduates and Graduates: —

1. Asst. Professor SPALDING. — Harmony.
1 Se., 6 Ju., 6 So., 22 Fr., 3 Sp., 2 Sc., 1 Law. Total 41.
2. Asst. Professor SPALDING. — Counterpoint. 1 Gr., 3 Ju., 10 So. Total 14.

2a *hf.* Asst. Professor SPALDING. — Vocal Counterpoint, with analysis of choral works of the great composers. 1 Se., 4 Ju., 2 So. Total 7.

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4 *hf.* Asst. Professor SPALDING. — Musical Form, with analysis of the works of the great composers. 2 Se., 4 Ju., 5 So. Total 11.

Primarily for Graduates : —

†5. Professor PAINE. — Canon and Fugue. Free Thematic Music. 1 Se., 2 Ju., 2 So., 1 R. Total 6.

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A *hf.* Dr. E. V. HUNTINGTON. — Logarithms. Plane and Spherical Trigonometry. 4 Se., 2 Ju., 9 So., 14 Fr., 3 Sp., 3 Sc. Total 35.

B *hf.* Asst. Professor BÔCHER. — Plane Analytic Geometry (elementary course). 6 So., 11 Fr., 1 Sp., 3 Sc. Total 21.

C. Professor BYERLY. — Plane and Solid Analytic Geometry (extended course). 3 Se., 2 Ju., 6 So., 10 Fr., 1 Sp., 2 Sc. Total 24.

D *hf.* Dr. E. V. HUNTINGTON. — Algebra. 1 Se., 4 Ju., 13 So., 20 Fr., 4 Sp., 5 Sc. Total 47.

E *hf.* Dr. BOUTON and Mr. RANSOM. — Solid Geometry. 2 Se., 2 Ju., 9 So., 26 Fr., 2 Sp., 19 Sc. Total 60.

G *hf.* Dr. BOUTON. — Descriptive Geometry. 1 Gr., 2 Se., 3 Ju., 3 So., 2 Fr., 2 Sc. Total 13.

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4. Mr. WHITTEMORE. — The Elements of Mechanics. 8 Gr., 3 Se., 3 Ju., 1 So., 1 Sc. Total 16.

For Undergraduates and Graduates : —

3. Asst. Professor BÔCHER. — Introduction to Modern Geometry and Modern Algebra. 8 Gr., 1 Se., 3 Ju., 3 So., 2 Sc. Total 17.

5. Asst. Professor OSGOOD. — Differential and Integral Calculus (second course). 7 Gr., 1 Se., 3 Ju., 1 So., 1 Sp. Total 13.

8 *hf.* Professor BYERLY. — Dynamics of a Rigid Body. 5 Gr., 1 Se. Total 6.

12 *hf.* Asst. Professor BÔCHER. — Infinite Series and Products. 8 Gr., 2 Se., 1 Ju., 1 So. Total 12.

14b *hf.* Asst. Professor OSGOOD. — Algebra. Galois's Theory of Equations. 7 Gr., 1 Se. Total 8.

Primarily for Graduates : —

†13. Asst. Professor OSGOOD. — The Theory of Functions (introductory course). 3 Gr., 2 Se., 3 R. Total 8.

- ‡7a. Professor J. M. PEIRCE. — The Theory of Triangular Coördinates and Algebraic Plane Curves, with special study of the properties of Cubics.
1 Gr., 2 So., 2 R. Total 5.
- ‡22 ¹/₂f. Mr. WHITTEMORE. — Introduction to the Differential Geometry of Curves and Surfaces. 2 Gr., 1 Se., 1 R. Total 4.
- ‡9. Professor J. M. PEIRCE. — The Calculus of Quaternions (second course); including the study by Quaternions of the Dynamics of Particles and Rigid Bodies. 1 Se., 1 Ju., 2 R. Total 4.
- ‡10. Professor BYERLY. — Trigonometric Series. Introduction to Spherical Harmonics. The Potential Function. 5 Gr., 1 Se., 1 R. Total 7.
- ‡15. Dr. BOUTON. — Differential Equations, with an introduction to Lie's Theory of Continuous Groups. 5 Gr., 1 R. Total 6.
- ‡17 ¹/₂f. Asst. Professor OSGOOD. — The Theory of Functions (advanced course): Riemann's Theory of Functions. 4 Gr. Total 4.
- ‡31 ²/₃f. Professor BÔCHER. — The Theory of Functions (advanced course): Definite Integrals. 6 Gr. Total 6.
- ‡30 ¹/₂f. Asst. Professor BÔCHER. — Introduction to Partial Differential Equations. 3 Gr., 1 R. Total 4.
- ‡21 ¹/₂f. Professor J. M. PEIRCE. — The Calculus of Probabilities. 1 Gr. Total 1.
- ‡21a ²/₃f. Professor J. M. PEIRCE. — The Algebra of Logic.
5 Gr., 1 Se., 2 Ju., 1 So., 1 R. Total 10.

COURSES OF READING AND RESEARCH.

- ‡20e. Asst. Professor OSGOOD. — Selected Topics in the Theory of Functions. 1 Gr. Total 1.
- ‡20f. Asst. Professor BÔCHER. — Selected Topics in the Theory of Differential Equations. 2 Gr. Total 2.

Astronomy.

Primarily for Undergraduates: —

- 1 ¹/₂f. Asst. Professor WILLSON and Mr. J. F. COLE. — Descriptive Astronomy. 21 Se., 20 Ju., 9 So., 4 Fr., 20 Sc. Total 74.
- 2 ²/₃f. Asst. Professor WILLSON and Mr. J. F. COLE. — Practical Astronomy. Application of Astronomy to Navigation and Exploration. 1 Gr., 1 Se., 5 Ju., 3 So., 3 Fr., 3 Sc. Total 16.

For Undergraduates and Graduates: —

3. Asst. Professor WILLSON. — Practical Astronomy. 3 Gr., 1 Se., 1 So., 1 Sc. Total 6.

Engineering.

The courses in Engineering are intended primarily for students in the Lawrence Scientific School, but many of them may be counted towards the degree of A.B. The Catalogue shows what courses may be so counted.

- 1a ¹/₂f. Asst. Professor LOVE, Messrs. ASHTON and FRIZELL, and Dr. E. V. HUNTINGTON. — Algebra. 3 Se., 3 Ju., 9 So., 11 Fr., 119 Sc. Total 145.

1b¹⁻²*hf.* Asst. Professor LOVE, Messrs. ASHTON and FRIZELL, and Dr. E. V. HUNTINGTON. — Trigonometry.

3 Se., 6 Ju., 13 So., 13 Fr., 107 Sc. Total 142.

1d¹*hf.* Asst. Professor LOVE, Messrs. ASHTON and FRIZELL, and Dr. E. V. HUNTINGTON. — Analytic Geometry.

2 Se., 7 Ju., 12 So., 11 Fr., 117 Sc. Total 149.

1c. Asst. Professor LOVE, Messrs. ASHTON and FRIZELL, and Dr. E. V. HUNTINGTON. — Differential and Integral Calculus.

1 Se., 7 Ju., 7 So., 73 Sc. Total 88.

1f¹*hf.* Asst. Professor LOVE. — Solid Analytic Geometry. Integral Calculus and Differential Equations.

3 Sc. Total 3.

3a. Messrs. KENNEDY, A. E. NORTON, MEEM, DURANT, and CARROLL. — Mechanical Drawing.

3 Gr., 8 Se., 14 Ju., 21 So., 29 Fr., 115 Sc. Total 190.

3b¹*hf.* Mr. MOYER. — Descriptive Geometry.

1 Gr., 6 Se., 4 Ju., 4 So., 52 Sc. Total 67.

3d¹*hf.* Mr. KENNEDY. — Mechanism. Study of Gearing and Mechanical Movements.

2 Se., 4 Ju., 4 So., 47 Sc. Total 57.

3e¹*hf.* Mr. MOYER. — Stereotomy, Shades, Shadows, and Perspective.

1 Gr., 2 Se., 2 So., 4 Sc. Total 9.

4a. Mr. TURNER and assistants. — Plane Surveying. (See page 88.)

1 Gr., 6 Se., 21 Ju., 21 So., 11 Fr., 2 Sp., 52 Sc. Total 114.

4c. Mr. TURNER and assistants. — Geodetic Surveying. (See page 88.)

1 Gr., 3 Se., 12 Ju., 12 So., 8 Fr., 32 Sc. Total 68.

4d. Mr. TURNER and assistants. — Railroad Surveying. (See page 88.)

1 Gr., 4 Se., 12 Ju., 13 So., 8 Fr., 33 Sc. Total 71.

10a. Asst. Professor BURKE and Mr. TURNER. — Chipping, filing, and fitting. (See page 88.)

1 Gr., 2 So., 1 Fr., 21 Sc. Total 25.

10b. Asst. Professor BURKE and Mr. TURNER. — Blacksmithing. (See page 88.)

1 Gr., 2 So., 1 Fr., 20 Sc. Total 24.

10c. Asst. Professor BURKE and Mr. TURNER. — Pattern-making and Foundry Practice. (See page 88.)

1 Gr., 2 So., 1 Fr., 21 Sc. Total 25.

10e. Asst. Professor BURKE and Mr. TURNER. — Machine Shop Practice. (See page 88.)

1 Gr., 2 So., 1 Fr., 18 Sc. Total 22.

For Undergraduates and Graduates: —

5b¹*hf.* Asst. Professor JOHNSON and Mr. MOYER. — Elementary Statics. Graphic and Algebraic Methods.

2 Gr., 6 Se., 11 Ju., 5 So., 91 Sc. Total 115.

5d¹*hf.* Asst. Professor JOHNSON and Mr. MOYER. — Resistance of Materials (introductory course). Elementary Structural Design.

2 Gr., 4 Se., 10 Ju., 3 So., 66 Sc. Total 85.

5a. Professor HOLLIS, and Messrs. H. J. HUGHES and FOX. — Applied Mechanics.

1 Gr., 3 Se., 4 Ju., 49 Sc. Total 57.

- 5c ¹hf. Professor HOLLIS. — Resistance of Materials (second course).
2 Gr., 1 Se., 1 Ju., 22 Sc. Total 26.
- 6a ¹hf. Mr. H. J. HUGHES. — Hydraulics and Hydraulic Motors.
2 Gr., 2 Se., 2 Ju., 36 Sc. Total 42.
- 6c ¹hf. Mr. H. J. HUGHES. — Water Supply and Sanitary Engineering.
2 Gr., 16 Sc., 3 Bu. Total 21.
- 6d ¹hf. Mr. H. J. HUGHES. — Canals, Rivers, and Harbors. Irrigation.
1 Gr., 1 Se., 8 Sc. Total 10.
- 7a. Asst. Professor JOHNSON. — Bridges and Buildings. Design of Framed Structures.
3 Gr., 1 Se., 14 Sc. Total 18.
- 8a ¹hf. Asst. Professor JOHNSON. — Masonry and Foundations.
4 Gr., 1 Se., 1 Ju., 33 Sc., 1 Bu. Total 40.
- 11a ¹hf. Asst. Professor MARKS and Mr. HASKELL. — Steam Machinery (introductory course). 1 Gr., 6 Se., 5 Ju., 5 So., 2 Fr., 2 Sp., 87 Sc. Total 108.
- 12b ¹hf. Asst. Professor MARKS. — Elements of Thermodynamics. Theory of Heat Engines.
1 Gr., 3 Se., 2 Ju., 38 Sc. Total 44.
- 12a ¹hf. Asst. Professor MARKS. — Efficiency and Economics of Heat Engines.
13 Sc. Total 13.
- 12c ¹hf. Asst. Professor BURKE. — Heating and Ventilation.
1 Gr., 12 Sc. Total 13.
- 13a. Asst. Professor MARKS, and Messrs. MOYER and HASKELL. — Engineering Laboratory. Introductory course in experimental methods.
5 Gr., 2 Se., 3 Ju., 38 Sc. Total 48.
- 13b. Asst. Professor MARKS and Mr. MOYER. — Engineering Laboratory (second course).
12 Sc. Total 12.
- 14a ¹hf. Mr. KENNEDY. — Machine Design (introductory course).
3 Se., 27 Sc. Total 30.
- 14b. Professor HOLLIS. — Machine Design (second course). 10 Sc. Total 10.
- 15a. Professor HOLLIS. — Marine Engines and Boilers. 3 Sc. Total 3.
- 16a. Asst. Professor ADAMS and Mr. WHITING. — Generation, Transmission, and Utilization of Electrical Energy (elementary course).
5 Gr., 6 Se., 4 Ju., 38 Sc. Total 53.
- 16c. Professor KENNELLY. — Direct Current Dynamo-Electric Machinery.
2 Gr., 1 Ju., 13 Sc. Total 16.
- 16e. Asst. Professor ADAMS and Mr. WHITING. — Alternating Currents and Alternating Current Machinery.
4 Gr., 4 Sc. Total 8.
- 16d. Asst. Professor ADAMS. — Dynamo Design. 4 Sc. Total 4.
- 16f. Mr. WHITING. — Electrical Engineering Laboratory. 1 Gr., 7 Sc. Total 8.
- 17a ¹hf. Professor KENNELLY. — Electric Transmission and Distribution of Power.
2 Gr., 5 Sc. Total 7.
- 17b ¹hf. Professor KENNELLY. — Telegraphy and Telephony.
1 Gr., 1 Se., 2 Ju., 15 Sc. Total 19.
- 18a ¹hf. Asst. Professor BURKE. — Metallurgy. 1 Se., 21 Sc. Total 22.

21. Professor HOLLIS. — Conference on Engineering Subjects. 26 Sc. Total 26.
 22¹/₂f. Asst. Professor WESTENGARD. — Contracts and Specifications. The Principles of Common Law as applied to Contracts.
 2 Se., 35 Sc., 1 Bu. Total 38.

Physics.

Primarily for Undergraduates: —

- B. Professor HALL, Dr. AYRES, and Mr. SERVISS. — Experimental Physics (elementary course).
 1 Gr., 4 Se., 7 Ju., 30 So., 47 Fr., 9 Sp., 73 Sc., 2 Bu. Total 173.
 C. Asst. Professor SABINE, Dr. H. W. MORSE, and Mr. L. D. HILL. — Experimental Physics. Mechanics, Sound, Light, Magnetism, and Electricity.
 1 Gr., 16 Se., 13 Ju., 28 So., 53 Fr., 4 Sp., 83 Sc. Total 198.
 1. Professor HALL and Mr. MCKAY. — General Descriptive Physics.
 4 Se., 6 Ju., 7 So., 4 Fr., 1 Sp., 25 Sc., 1 Bu. Total 48.
 2¹/₂f. Asst. Professor SABINE. — The Theory of Light in its application to familiar optical phenomena and to optical instruments.
 1 Se., 3 Ju., 3 So., 6 Sc. Total 13.
 11¹/₂f. Dr. H. W. MORSE. — The Theory of Primary and Secondary Batteries. Galvanic Cells; Lead, Iron-Nickel, and Thallium Storage Batteries; Electricity Direct from Coal.
 2 Gr., 6 Se., 8 Ju., 4 So., 1 Sp., 11 Sc. Total 32.

For Undergraduates and Graduates: —

3. Professor B. O. PEIRCE and Dr. AYRES. — Electrostatics, Electrokinematics, and parts of Electromagnetism.
 5 Gr., 5 Se., 4 Ju., 1 So., 11 Sc. Total 26.
 12¹/₂f. Dr. LYMAN. — Electric Conduction in Gases with special reference to the Theory of Ions.
 4 Gr., 4 Se., 2 Ju., 1 So., 1 Sc. Total 12.
 4. Professor TROWBRIDGE, Dr. G. W. PIERCE, and Dr. LYMAN. — Electrodynamics, Magnetism, and Electromagnetism.
 1 Gr., 1 Se., 2 Ju., 3 Sc. Total 7.
 5. Asst. Professor SABINE. — Light.
 5 Gr., 1 Ju., 1 Sc. Total 7.
 6s¹/₂f. Professor HALL. — Elements of Thermodynamics.
 3 Gr., 1 Se., 1 Ju., 1 So. Total 6.
 6s¹/₂f. Professor HALL. — Modern Developments and Applications of Thermodynamics.
 3 Gr. Total 3.
 14¹/₂f. Dr. H. W. MORSE. — The Theory of Photography. Actinometry, Reversible and Irreversible Photochemical Reactions, Theory of the Latent Image, Development, Fixing, Intensification, etc.; Color Photography; Catagraphy.
 1 Gr., 1 Se. Total 2.
 15¹/₂f. Dr. G. W. PIERCE. — Radiation.
 5 Gr., 2 Se., 1 Ju. Total 8.

Primarily for Graduates: —

- 17¹/₂f. Professor HALL. — The Theory of Probability and the Kinetic Theory of Gases.
 3 Gr., 1 Sc. Total 4.
 19. Professor B. O. PEIRCE and Dr. G. W. PIERCE. — The Mathematical Theory of Electricity and Magnetism.
 6 Gr., 1 Sc. Total 7.

COURSES OF RESEARCH.

- 20a. Professor TROWBRIDGE. — Light and Electricity. 2 Gr. Total 2.
 20c. Professor HALL. — Heat and Electricity. 1 Gr., 1 Sc. Total 2.

Chemistry.

Primarily for Undergraduates:—

1. Professor C. L. JACKSON, Mr. CALHANE, and Messrs. MARK, BEHR, WYMAN, CARLTON, CORSON, BENEDICT, and R. F. JACKSON. — Descriptive Inorganic Chemistry.
 17 Se., 26 Ju., 63 So., 90 Fr., 10 Sp., 128 Sc., 1 Bu. Total 335.
 2 ¹/₂hf. Dr. BAXTER. — Organic Chemistry (elementary course).
 12 Se., 24 Ju., 24 So., 16 Sc., 1 Bu. Total 77.
 3 Asst. Professor SANGER, Mr. MCCARTHY, and Messrs. BONNET, BUTLER, and LANGMAID. — Qualitative Analysis.
 1 Gr., 10 Se., 36 Ju., 39 So., 1 Fr., 1 Sp., 36 Sc. Total 124.
 4. Dr. BAXTER and Mr. FORBES. — Quantitative Analysis, gravimetric and volumetric.
 1 Gr., 6 Se., 15 Ju., 3 So., 14 Sc. Total 39.

For Undergraduates and Graduates:—

- 8 ¹/₂hf. Professor RICHARDS and Dr. G. N. LEWIS. — The Historical Development of Chemical Theory. 4 Se., 9 Ju., 11 So., 11 Sc., 1 Bu. Total 36.
 11. Asst. Professor SANGER. — Industrial Chemistry.
 8 Gr., 4 Se., 2 Ju., 7 Sc. Total 21.
 9 ¹/₂hf. Dr. BAXTER and Mr. HINES. — Advanced Quantitative Analysis.
 2 Gr., 6 Se., 1 Ju., 7 Sc. Total 16.
 10 ¹/₂hf. Dr. BAXTER and Mr. HINES. — Gas Analysis.
 5 Gr., 6 Se., 3 Ju., 1 So., 6 Sc. Total 21.
 5. Professor H. B. HILL and Mr. RUSSE. — The Carbon Compounds.
 2 Gr., 7 Se., 4 Ju., 1 So., 7 Sc. Total 21.

Primarily for Graduates:—

6. Professor RICHARDS and Mr. R. C. WELLS. — Physical Chemistry.
 6 Gr., 3 Se., 3 Sc. Total 12.
 12 ¹/₂hf. Dr. BAXTER. — Photochemistry, including the use of Optical Instruments in Chemistry. 3 Gr., 2 Se., 4 Sc. Total 9.
 7 ¹/₂hf. Dr. G. N. LEWIS. — Electrochemistry. 7 Gr., 3 Se., 3 Sc. Total 18.
 13 ¹/₂hf. Dr. LEWIS. — Experimental Electrochemistry. 5 Gr., 1 Sc. Total 6.
 14. Dr. LEWIS. — Advanced Physical Chemistry. Chemical Kinetics and Equilibrium. 2 Gr. Total 2.

COURSES OF RESEARCH.

- 20a. Professor RICHARDS and Dr. BAXTER. — Inorganic Chemistry, including Determination of Atomic Weights. 4 Gr. Total 4.
 20b. Professor C. L. JACKSON. — Organic Chemistry. 5 Gr. Total 5.
 20c. Professor H. B. HILL. — Organic Chemistry. 1 Gr. Total 1.
 20d. Professor RICHARDS and Dr. LEWIS. — Physical Chemistry. 5 Gr. Total 5.
 20e. Asst. Professor SANGER. — Applied Chemistry. 3 Gr. Total 3.

Botany.*Primarily for Undergraduates:—*

- 1¹/₂f. Professor GOODALE, Mr. PLOWMAN, and other assistants. — Botany (introductory course).

14 Se., 15 Ju., 41 So., 58 Fr., 7 Sp., 36 Sc., 1 Bu. Total 172.

- 2¹/₂f. Professor THAXTER, and Messrs. BLAKESLEE and JOHNSTON. — Morphology of Plants. 4 Gr., 2 Se., 5 Ju., 12 So., 1 Fr., 19 Sc. Total 43.

For Undergraduates and Graduates:—

3. Asst. Professor JEFFREY and Mr. PLOWMAN. — Botany (second course). Morphology, Histology, and Physiology of Flowering Plants.

1 Gr., 1 Se., 3 So., 2 Sc. Total 7.

- 6¹/₂f. Professor THAXTER and Mr. BLAKESLEE. — Cryptogamic Botany. Bacteria, Mycetozoa, Fungi, and Algae. 3 Gr., 1 Ju., 1 So., 6 Sc. Total 11.

*Primarily for Graduates:—***COURSES OF RESEARCH.**

- 20a. Professor GOODALE and Asst. Professor JEFFREY. — Structure and Development of Phanerogams. Experimental Vegetable Physiology. Economic Botany, with special reference to Tropical Plants.

2 Gr. Total 2.

- 20b. Professor THAXTER. — Structure and Development of Cryptogams.

2 Gr. Total 2.

- 20c. Professor B. L. ROBINSON. — Taxonomy of Phanerogams.

1 Gr., 1 Sc. Total 2.

Zoölogy.*Primarily for Undergraduates:—*

- 1¹/₂f. Asst. Professor G. H. PARKER, Mr. G. SMITH, and other assistants. — Zoölogy (introductory course).

2 Gr., 13 Se., 20 Ju., 30 So., 41 Fr., 4 Sp., 34 Sc., 1 Bu. Total 145.

- 2¹/₂f. Dr. CASTLE, Mr. PETERS, and other assistants. — Morphology of Animals.

2 Gr., 3 Se., 4 Ju., 13 So., 3 Fr., 1 Sp., 17 Sc. Total 43.

For Undergraduates and Graduates:—

3. Dr. H. W. RAND and Mr. CARPENTER. — Comparative Anatomy of Vertebrates.

3 Gr., 3 Se., 4 Ju., 3 So., 8 Sc. Total 21.

- 4¹/₂f. Professor MARK and Dr. H. W. RAND. — Microscopical Anatomy.

3 Gr., 2 Se., 1 Ju., 3 Sc. Total 9.

- 5¹/₂f. Professor MARK and Dr. H. W. RAND. — Embryology of Vertebrates.

2 Gr., 2 Se., 1 Ju., 4 Sc. Total 9

- 9¹/₂f. Asst. Professor R. T. JACKSON. — Fossil Invertebrates.

1 Gr., 1 Se. Total 2.

- 9a¹/₂f. Asst. Professor R. T. JACKSON. — Fossil Invertebrates. Advanced studies of special groups.

1 Se. Total 1.

10. Dr. CASTLE. — Experimental Morphology. Ontogenesis.

8 Gr., 1 Se., 1 Sc. Total 5.

13 ¹/₂f. Asst. Professor G. H. PARKER. — Introduction to the study of the Nervous System. 5 Gr., 2 Se., 1 So., 4 Sc. Total 12.

16 ³/₄f. Asst. Professor G. H. PARKER. — The Structure and Functions of the Nervous System and its Relation to Animal Habits. Central Nervous Organs and Terminal Organs of Efferent Nerves. 4 Gr., 3 Se., 1 So., 3 Sc. Total 11.

Primarily for Graduates : —

COURSE OF RESEARCH.

20. Professor MARK, Asst. Professors R. T. JACKSON and G. H. PARKER, and Dr. CASTLE. — Zoological Investigations. 8 Gr., 1 Se., 3 Sc. Total 12.

Geology and Geography.

Primarily for Undergraduates : —

A ¹/₂f. Mr. READ, assisted by Mr. WILDER. — Physiography of the Lands. 1 Gr., 9 Se., 4 Ju., 11 So., 3 Fr., 42 Sc., 3 Bu. Total 73.

B ³/₄f. Asst. Professor WARD, assisted by Mr. WILDER. — Meteorology (elementary course). 1 Gr., 8 Se., 7 Ju., 19 So., 27 Fr., 1 Sp., 54 Sc., 1 Bu. Total 118.

4 ¹/₂f. Professor SHALEH, assisted by Messrs. P. S. SMITH and GOLDTHWAIT. — Elementary Geology. 1 Gr., 27 Se., 48 Ju., 138 So., 179 Fr., 8 Sp., 100 Sc., 1 Bu. Total 502.

5 ³/₄f. Asst. Professor J. B. WOODWORTH, aided by Mr. GOLDTHWAIT and other assistants. — Elementary Field and Laboratory Geology. 4 Gr., 4 Se., 18 Ju., 29 So., 52 Fr., 4 Sp., 69 Sc., 2 Bu. Total 182.

1 ¹/₂f. Asst. Professor WARD. — Meteorology (second course). 2 Se., 1 Ju., 6 Sc. Total 9.

For Undergraduates and Graduates : —

6 ³/₄f. Professor DAVIS and Mr. READ. — Physiography of the United States. 2 Gr., 3 Se., 4 Ju., 2 So., 2 Fr., 23 Sc. Total 36.

8. Asst. Professor J. B. WOODWORTH, assisted by Mr. P. S. SMITH. — General Geology. 2 Gr., 2 Se., 2 Ju., 21 Sc. Total 27.

10. Professor H. L. SMYTH, assisted by Mr. HENDERSON. — Mining Geology. 1 Gr., 4 Se., 3 Ju., 9 Sc. Total 17.

22. Dr. JAGGAR, assisted by Mr. LaFORGE. — Advanced Geological Field Work. Areal Geology in the vicinity of Boston. 5 Gr., 1 Se., 8 Sc. Total 14.

17 ³/₄f. Dr. JAGGAR, assisted by Mr. LaFORGE. — Experimental and Dynamical Geology. 1 Gr., 1 Ju., 3 Sc. Total 5.

16 ¹/₂f. Asst. Professor J. B. WOODWORTH. — Glacial Geology. 2 Gr., 1 Se., 1 So., 2 Sc. Total 6.

19 ¹/₂f. Asst. Professor WARD. — General Climatology. 2 Sc. Total 2.

25 ³/₄f. Asst. Professor WARD. — Climatology of the United States. 1 Se., 1 Ju., 4 Sc. Total 6.

- 14 ¹/₂hf. Professor SHALER, assisted by Mr. READ. — General Palaeontology.
18 Se., 13 Ju., 8 So., 1 Fr., 1 Sp., 21 Sc. Total 62.
11. Asst. Professor R. T. JACKSON, assisted by Mr. CUSHMAN. — Palaeontology.
1 Gr., 2 Se., 5 Sc. Total 8.
15. Asst. Professor R. T. JACKSON. Occasional Lectures by Professor SHALER. —
Historical Geology. 1 Gr., 4 Sc. Total 5.
- 18 ¹/₂hf. Professor H. L. SMYTH, assisted by Mr. HENDERSON. — Economic
Geology. Non-metalliferous products and water supply.
1 Gr., 11 Sc. Total 12.

Primarily for Graduates : —

COURSES OF RESEARCH.

- ‡20. Professor DAVIS. — Physiography (advanced course).
3 Gr., 1 Sc. Total 4.
21. Professor H. L. SMYTH. — Mining Geology (advanced course).
3 Sc. Total 3.
23. Professors SHALER, DAVIS, WOLFF, and H. L. SMYTH, Asst. Professor
J. B. WOODWORTH, and Dr. JAGGAR. — Geological Investigation in the
Field and Laboratory. 1 Gr., 1 Sc. Total 2.
26. Asst. Professor WARD. — Climatology (advanced course). 1 Sc. Total 1.

Mineralogy and Petrography.*Primarily for Undergraduates : —*

2. Asst. Professor PALACHE, assisted by Mr. WOOD. — Mineralogy.
4 Se., 9 Ju., 4 So., 2 Fr., 21 Sc. Total 40.
- 3 ¹/₂hf. Professor WOLFF. — Building Stones (course for students of Architecture).
1 Gr., 1 Se., 11 Sc. Total 13.

For Undergraduates and Graduates : —

- 7 ¹/₂hf. Asst. Professor PALACHE. — Crystallography.
1 Gr., 1 Se., 2 Sc. Total 4.
- 8 ¹/₂hf. Professor WOLFF and Asst. Professor PALACHE. — Physical Crystal-
lography (mainly Optical Mineralogy and its applications).
1 Ju., 1 Sc. Total 2.
12. Professor WOLFF, assisted by Mr. WOOD. — Petrography. 2 Sc. Total 2.

Mining and Metallurgy.*Primarily for Undergraduates : —*

- 1 ¹/₂hf. Professor H. L. SMYTH, assisted by Mr. HENDERSON. — Mining. Prospect-
ing and exploring; sampling and the principles of exploitation.
2 Se., 4 Ju., 14 Sc. Total 20.
- 9 ¹/₂hf. Asst. Professor SAUVEUR. — General Metallurgy.
2 Gr., 8 Se., 11 Ju., 3 So., 2 Fr., 30 Sc. Total 56.
- 10 ¹/₂hf. Mr. RAYMER, assisted by Mr. P. R. CURTIS. — Fire Assaying.
2 Se., 1 Ju., 17 Sc. Total 20.

For Undergraduates and Graduates :—

- 2 ¹/_{hf}. Asst. Professor SAUVEUR, assisted by Mr. BOYNTON. — Metallurgy of iron and steel. 2 Gr., 19 Sc. Total 21.
- 3 ²/_{hf}. Professor H. L. SMYTH. — Metallurgy of copper, nickel, lead, zinc, and the minor metals. 1 Gr., 1 Se., 18 Sc. Total 20.
4. Mr. RAYMER, assisted by Mr. P. R. CURTIS. — Ore-dressing, Concentration, and Milling. 1 Gr., 2 Se., 15 Sc. Total 18.
- 5 ¹/_{hf}. Professor H. L. SMYTH. — Mining. Metal and coal mining; exploitation. 3 Gr., 1 Se., 15 Sc. Total 19.
- 11 ²/_{hf}. Mr. RAYMER. — Mining Plant. 2 Gr., 13 Sc. Total 15.
- 6 ²/_{hf}. Mr. C. H. WHITE, assisted by Mr. SCHOENFUSS. — Metallurgical Chemistry. 1 Gr., 1 Se., 1 Ju., 13 Sc. Total 16.
7. Mr. C. H. WHITE, assisted by Mr. SCHOENFUSS. — Metallurgical Chemistry (advanced course). 1 Gr., 2 Se., 9 Sc. Total 12.
- 8 ¹/_{hf}. Mr. C. H. WHITE. — Leaching Processes for Gold and Silver Ores. 1 Gr., 5 Sc. Total 6.
12. Mr. RAYMER. — Mining. The study of mining operations. 11 Sc. Total 11.
- 14 ²/_{hf}. Asst. Professor SAUVEUR, assisted by Mr. BOYNTON. — Metallography. 1 Se., 5 Sc. Total 6.
- 17 ²/_{hf}. Mr. RAYMER. — Mine Surveying. The general principles of underground and claim surveying. The construction of maps, sections, and models. 1 Gr., 1 Se., 12 Sc. Total 14.

Primarily for Graduates :—

COURSE OF RESEARCH.

20. Asst. Professor SAUVEUR. — Metallography and the Physics of Metals. 1 Gr. Total 1.

Anthropology.*For Undergraduates and Graduates :—*

1. Dr. RUSSELL. — General Anthropology. 1 Gr., 15 Se., 11 Ju., 14 So., 3 Fr., 7 Sc. Total 51.
5. Dr. DIXON. — American Archaeology and Ethnology. 1 Gr., 5 Se., 2 So., 1 Fr. Total 9.

Primarily for Graduates :—

- ‡2 ²/_{hf}. Dr. RUSSELL. — Somatology. 2 Se., 1 So. Total 3.
- ‡3 ¹/_{hf}. Dr. DIXON. — Primitive Religions. Theories of origin, animism, totemism, fetishism, ceremonial, symbolism, comparative mythology, and folklore. 1 Gr., 6 Se., 1 Ju., 1 So., 1 Sc. Total 10.
- ‡4 ¹/_{hf}. Dr. RUSSELL. — Prehistoric Archaeology. European Ethnology. 1 Gr., 4 Se. Total 5.
- ‡7 ²/_{hf}. Dr. DIXON. — Ethnology of Polynesia and Australia. 6 Se., 8 Ju., 5 So., 2 Fr., 3 Sc. Total 24.

COURSES OF SPECIAL STUDY.

‡20a. Professor PUTNAM. — American Archaeology and Ethnology.

1 Gr. Total 1.

‡20b. Dr. RUSSELL. — Advanced Somatology.

1 Gr. Total 1.


Anatomy, Physiology, and Hygiene.

1. Drs. DARLING, PROVANDIE, and BACON. — Elementary Anatomy and Physiology. Personal Hygiene. Emergencies.

19 Se., 24 Ju., 54 So., 5 Fr., 2 Sp., 24 Sc. Total 128.

In accordance with a vote of the President and Fellows whereby the Faculty may, under certain conditions, authorize a Doctor of Philosophy or a Doctor of Science to give instruction gratuitously or for such fees as he may himself collect, Dr. Karl Schmidt conducted a course in The Logical Foundations of Arithmetic, Dr. L. A. Freedman a course in The Sources of Modern German Aesthetics, and Dr. W. F. Tilton a course in The History of the Armada.

Summer Courses of Instruction, 1903.

The following seventy-two courses, an increase of twenty-eight since the preceding year, were given, under the direction of the Faculty, in the summer of 1903. The abbreviations, with the addition of S.S. for "member of the Summer School," are the same as those in the preceding list. A hand  points to each course that may be counted toward a degree:—

Sanskrit.

I. Professor LANMAN, assisted by Dr. RYDER. — Sanskrit for Beginners.
5 times a week, for 6 weeks. 2 S. S. Total 2.

Greek.

A. Dr. CHASE. — Greek for Beginners. 5 times a week, for 6 weeks.
1 Fr., 11 S. S. Total 12.
B. Professor A. R. BENNER (Phillips Acad., Andover). — Course in Homer for Teachers. 5 times a week, for 6 weeks. 1 So., 3 S. S. Total 4.

Latin.

A. Dr. BAKER. — General Course for Teachers. 5 times a week, for 6 weeks.
37 S. S. Total 37.
B. Dr. RAND. — The Life and Works of Virgil. 5 times a week, for 6 weeks.
1 R., 10 S. S. Total 11.

English.

A. Asst. Professor HURLBUT, Messrs. CASTLE and ELLS. — English Composition (elementary course). 5 times a week, for 6 weeks.
1 Sc., 50 S. S. Total 51.

- B.* Mr. GREENOUGH. — English Composition (advanced course). 5 times a week, for 6 weeks. 1 Sc., 49 S. S. Total 50.
- C.* Mr. RIDEOUT. — English Composition (second advanced course). 5 times a week, for 6 weeks. 15 S. S. Total 15.
- D.* Mr. CARLETON. — English Composition (argumentation). 5 times a week, for 6 weeks. 4 S. S. Total 4.
- Mr. REYNOLDS. — College Admission Requirements in English. 5 times a week, for 6 weeks. 69 S. S. Total 69.
- Dr. BROWN. — Anglo-Saxon. Anglo-Saxon Reader and Grammar. 5 times a week, for 6 weeks. 8 S. S. Total 8.
- Dr. HOYT. — Chaucer. 5 times a week, for 6 weeks. 2 S. S. Total 2.
- Dr. NEILSON. — Shakspeare. 5 times a week, for 6 weeks. 18 S. S. Total 18.
- Professor THORNDIKE (Northwestern Univ.). — English Literature in Outline, from Anglo-Saxon Times to the Present. 5 times a week, for 6 weeks. 7 S. S. Total 7.
- Dr. TUPPER. — English Literature from the Middle of the Sixteenth Century to the Death of Milton. 5 times a week, for 6 weeks. 6 S. S. Total 6.
- Mr. COPELAND. — English Literature of the Eighteenth Century. 5 times a week, for 6 weeks. 18 S. S. Total 18.
- Professor THORNDIKE (Northwestern Univ.). — English Literature of the Nineteenth Century, from the publication of the Lyrical Ballads to the death of Tennyson. 5 times a week, for 6 weeks. 27 S. S. Total 27.
- A.* Mr. WINTER, Mr. E. M. LEWIS (Williams College), and Mr. WILLARD. — Public Speaking, Reading, Voice Training. 5 times a week, for 6 weeks. 20 S. S. Total 20.
- B.* Mr. WINTER and Mr. E. M. LEWIS. — Reading and Oral Discussion. 5 times a week, for 6 weeks. 5 S. S. Total 5.
- C.* Mr. WINTER. — Platform speaking. 5 times a week, for 6 weeks. 6 S. S. Total 6.

German.

- A.* Dr. COAR. — Composition and Conversation; Methods of Teaching German. 5 times a week, for 6 weeks. 30 S. S. Total 30.
- B.* Professor H. S. WHITE. — German Literature of the Eighteenth Century. 5 times a week, for 6 weeks. 5 S. S. Total 5.
- C.* Dr. WALZ. — German Literature in the Twelfth and Thirteenth Centuries. 5 times a week, for 6 weeks. 5 S. S. Total 5.

French.

- A.* Mr. SNOW. — Intermediate French Course for Teachers. 5 times a week, for 6 weeks. 1 Sc., 16 S. S. Total 17.
- B.* Professor W. F. GIESE (Univ. of Michigan). — French Literature of the Seventeenth Century. 5 times a week, for 6 weeks. 2 S. S. Total 2.
- C.* Asst. Professor BABBITT. — French Literature of the Last Three Centuries. 5 times a week, for 6 weeks. 4 S. S. Total 4.

Spanish.

- A. Asst. Professor FORD.—Introductory Course. 5 times a week, for 6 weeks.
3 S. S. Total 3.
- B. Asst. Professor FORD.—Advanced Course. 5 times a week, for 6 weeks.
7 S. S. Total 7.

Russian.

- Asst. Professor WIENER.—Elementary Course. 5 times a week, for 6 weeks.
2 S. S. Total 2.

History and Government.

- A. Professor HASKINS and Mr. E. KIMBALL.—Roman History. 5 times a week, for 6 weeks.
9 S. S. Total 9.
- B. Professor HASKINS and Dr. A. H. WILDE (Northwestern Univ.).—Mediæval History. 5 times a week, for 6 weeks.
21 S. S. Total 21.
- C. Dr. A. L. CROSS (Univ. of Michigan).—English History. 28 lectures, supplemented by written exercises. 5 times a week, for 6 weeks.
10 S. S. Total 10.
- D. Dr. A. L. CROSS (Univ. of Michigan) and Mr. E. KIMBALL.—American History. Lectures and training in the use of materials, and in the application of the laboratory method of study. 25 lectures, supplemented by 4 pieces of written work. 5 times a week, for 6 weeks.
1 Sc., 39 S. S. Total 40.
- E. Dr. J. P. WARREN.—Modern Constitutional Government. 5 times a week, for 6 weeks.
4 S. S. Total 4.
- F. Professor GROSS.—English Institutions in the Middle Ages. 5 times a week, for 6 weeks.
1 S. S. Total 1.

Economics.

- A. Dr. SPRAGUE.—Outlines of Economics. Theory and principles. 5 times a week, for 6 weeks.
4 S. S. Total 4.
- B. Dr. SPRAGUE.—Economic History of the United States. 5 times a week, for 6 weeks.
1 Gr., 2 S. S. Total 3.
- C. Mr. J. H. PATTEN.—Railways and Other Public Works under Public and Corporate Management. 5 times a week, for 6 weeks. 3 S. S. Total 3.

Psychology.

- A. Dr. YERKES.—Lecture Course: The Principles, Methods, and Applications of Psychology. 5 times a week, for 6 weeks.
18 S. S. Total 18.
- B. Dr. YERKES and Dr. D. C. ROGERS.—Laboratory Course: An Experimental Study of Sensation, Perception, Attention, and Reaction, with Demonstrations. 5 times a week, for 6 weeks.
13 S. S. Total 13.

Education.

- S1. Mr. A. O. NORTON.—The History of Education since the Twelfth Century. 5 times a week, for 6 weeks. 8 S. S. Total 8.
- S2. Professor HANUS.—General Principles of Education. Courses of study; and some phases of organization and administration of schools and school systems. 5 times a week, for 6 weeks. 59 S. S. Total 59.
- S3. Professor HANUS.—Organization and Administration of Schools and School Systems. 5 times a week, for 6 weeks. 19 S. S. Total 19.
- S5. Mr. A. O. NORTON.—Psychology and Education. 5 times a week, for 6 weeks. 6 S. S. Total 6.
- S10d. Mr. W. H. CUSHING.—The Methods and Equipment of a Teacher of History. Lectures, discussions, reading, and written work. 5 times a week, for 6 weeks. 7 S. S. Total 7.
- S10e. Professor D. E. SMITH (Columbia Univ.).—The History and Teaching of Mathematics. 5 times a week, for 6 weeks. 1 R., 23 S. S. Total 24.

Theory of Design.

- Dr. ROSS, and Messrs. H. H. CLARK, H. H. CARROLL, and E. O. PARKER.—Lectures, with experimental practice, for designers, for teachers of Drawing and Painting, and for teachers of the History of Art. 5 times a week, for 6 weeks. 1 Sc., 87 S. S. Total 88.

Architectural Drawing.

- Mr. SWAN.—Architectural Drawing. 5 times a week, for 6 weeks. 1 Sc., 1 Bu., 10 S. S. Total 12.

Music.

- I. Mr. L. A. CORNE.—Grammar and Principles. 5 times a week, for 6 weeks. 9 S. S. Total 9.
- II. Mr. L. A. CORNE.—General Course. 5 times a week, for 6 weeks. 4 S. S. Total 4.

Mathematics.

- SD. Asst. Professor LOVE.—Advanced Algebra. 5 times a week, for 6 weeks. 4 Se., 1 Ju., 2 Fr., 1 Sp., 29 S. S. Total 37.
- SE. Dr. HUNTINGTON.—Solid Geometry. 5 times a week, for 6 weeks. 1 Ju., 2 So., 1 Fr., 3 Sc., 1 R., 9 S. S. Total 17.
- SA. Mr. C. H. ASHTON.—Plane Trigonometry. 5 times a week, for 6 weeks. 1 Ju., 4 So., 1 Fr., 1 R., 12 S. S. Total 19.
- SB. Mr. C. H. ASHTON.—Plane Analytic Geometry. 5 times a week, for 6 weeks. 1 Se., 1 Ju., 2 So., 4 Sc., 9 S. S. Total 17.
- S2. Dr. HUNTINGTON.—Differential and Integral Calculus. 5 times a week, for 6 weeks. 1 Ju., 3 So., 9 Sc., 12 S. S. Total 25.
- S13. Asst. Professors OSGOOD and BÖCHER.—The Theory of Functions. 5 times a week, for 6 weeks. 6 S. S. Total 6.

Physics.

- B. Professor W. E. McELFRESH and Mr. L. D. HILL.** — Elementary Physics. 5 times a week, for 6 weeks. 1 So., 2 Fr., 34 S. S. Total 37.
- C. Asst. Professor SABINE.** — Advanced Physics. 5 times a week, for 6 weeks. 1 Se., 1 So., 1 Sc., 12 S. S. Total 15.
- 4. Dr. PIERCE.** — Magnetism, Electromagnetism, and Electrodynamics. 5 times a week, for 6 weeks. 3 S. S. Total 3.

Chemistry.

- Dr. BAXTER, assisted by Messrs. R. C. WELLS and A. B. LAMB.** — Elementary Chemistry. 5 times a week, for 6 weeks. 1 So., 1 Fr., 14 S. S. Total 16.
- Dr. BAXTER, assisted by Messrs. R. C. WELLS and A. B. LAMB.** — Organic Chemistry. 5 times a week, for 6 weeks. 1 Fr., 1 Sp., 1 Me., 7 S. S. Total 10.
- Dr. BAXTER, assisted by Messrs. R. C. WELLS and A. B. LAMB.** — Quantitative Analysis. 5 times a week, for 6 weeks. 1 Me., 8 S. S. Total 9.
- Dr. BAXTER.** — Research work under direction of Instructor. 1 S. S. Total 1.

Botany.

- S1. Messrs. R. G. LEAVITT, PLOWMAN, and DANDENO.** — Introductory Course: Elementary Morphological, Physiological, and Ecological Botany. 5 times a week, for 6 weeks. 3 Ju., 3 So., 2 Fr., 1 Sp., 10 S. S. Total 19.
- S2. Mr. R. G. LEAVITT and assistants.** — Advanced Course: Morphology of Special Groups; Development of the Plant Kingdom. 5 times a week, for 6 weeks. 1 Fr., 11 S. S. Total 12.

Geology.

- S1. Professor SHALER and Professor J. E. WOODMAN.** — Elementary course. Lectures, laboratory, and field work. 5 times a week, for 6 weeks. 1 So., 3 Fr., 5 Sc., 12 S. S. Total 21.
- S2. Asst. Professor J. B. WOODWORTH.** — Field Work in Geology. 5 times a week, for 6 weeks. 1 So., 3 S. S. Total 4.
- S4. Mr. C. H. WHITE.** — Geological Field Work in the Rocky Mountain Region. 3 So., 2 Sc., 8 S. S. Total 13.

Geography.

- Mr. H. T. BURR, assisted by Mr. F. M. WILDER.** — Lectures, laboratory, and field work. 5 times a week, for 6 weeks. 40 S. S. Total 40.

Physical Education.

- Dr. SARGENT and assistants.** — Elementary and advanced courses in theory. 5 weeks. 93 S. S. Total 93.
- Dr. SARGENT and assistants.** — Elementary and advanced courses in practice. 5 weeks. 160 S. S. Total 160.

Historical Excursions.

- Mr. W. E. DORMAN, assisted by Mr. G. NEWHALL.** — Historical Excursions. 1 lecture and 7 excursions.

The following courses were given in the summer as part of the regular instruction of the Lawrence Scientific School:—

Engineering.

- 4a.** Mr. HUGHES.—Plane Surveying. Field work. Daily, 6 weeks.
1 Gr., 6 Se., 21 Ju., 21 So., 11 Fr., 2 Sp., 52 Sc., 8 S. S. Total 122.
- 4c.** Mr. HUGHES.—Geodetic Surveying. Daily, 5 weeks.
1 Gr., 3 Se., 12 Ju., 12 So., 8 Fr., 32 Sc., 8 S. S. Total 76.
- 4d.** Mr. HUGHES.—Railroad Surveying. Daily, 3 weeks.
1 Gr., 4 Se., 12 Ju., 18 So., 8 Fr., 33 Sc., 8 S. S. Total 79.
- 10a.** Asst. Professor BURKE, assisted by Mr. F. W. TURNER.—Chipping, filing, and fitting. 90 hours.
1 Gr., 2 So., 1 Fr., 21 Sc., 3 S. S. Total 28.
- 10b.** Asst. Professor BURKE, assisted by Mr. F. W. TURNER.—Blacksmithing. 90 hours.
1 Gr., 2 So., 1 Fr., 20 Sc., 2 S. S. Total 26.
- 10c.** Asst. Professor BURKE, assisted by Mr. F. W. TURNER.—Pattern Making, etc. 90 hours.
1 Gr., 2 So., 1 Fr., 21 Sc., 4 S. S. Total 29.
- 10e.** Asst. Professor BURKE, assisted by Mr. F. W. TURNER.—Machine-Shop Practice. 90 hours.
1 Gr., 2 So., 1 Fr., 18 Sc., 3 S. S. Total 25.

The numbering of courses of instruction, as the foregoing table shows, has become almost chaotic. Each Department had once a numbering of its own that seemed clear and reasonable; but none, unless it be the Department of Engineering, had a numbering that could be logically extended in several directions to match the growth of the elective work. In the Department of English, for example, Course 3*b* is *Béowulf* for Graduates, whereas Course 28 is an outline of English Literature, designed for Freshmen only: Courses 42*a* and 7*b* are in the same group, each covering a period of English Literature; but Course 42*a* covers a period by several centuries the earlier, of which a part is covered by a graduate course, numbered 4. Any confusion in the presentation of information to the public lessens, though in ever so small a degree, the respect of the public for the University; and confusion in the numbering of our courses wastes the time of all persons who use the elective lists. We need numbering or nomenclature that shall tell the reader at once whether a course is elementary or advanced and shall not be rendered obsolete by the establishment of new courses. That such a nomenclature may be devised I have no doubt; but thus far nobody has devised it.

Instruction provided for 1903-04.

Some of the new courses for 1903-04 are of peculiar interest. Dr. Ryder lectures on Sanskrit Drama, and requires for the course no knowledge of Sanskrit; Assistant Professor Harris deals with the Homeric Poems and with their influence to the time of the Renaissance; Professor H. W. Smyth lectures on the History of Classical Greek Literature, and directs the students' private reading; Professor Oertel, of Yale University, gives a General Introduction to Comparative Philology; Professor Capps, of the University of Chicago, discusses Greek Comedy and the Greek Theatre; Dr. Neilson and Mr. J. G. Hart treat English Literature in outline for persons who have not taken the Freshman course in the same subject; Mr. Copeland lectures on the Lives and Characters of Men of Letters, English and American; Professor Kittredge conducts special studies in Chaucer; Professor Francke, reinforced by the new Germanic Museum, deals with German Religious Sculpture from the Eleventh to the end of the Thirteenth Century, and its relation to homiletic and legendary literature; Assistant Professors Marcou and Ford offer a general view of Spanish Literature; Assistant Professor Fletcher and Dr. E. K. Rand give the History of Pastoral Literature, including the Classical Pastoral, the Latin Pastoral of the Middle Ages and the Renaissance, and the Pastoral in Modern European Literature; Dr. Potter lectures on Epic Poetry; Professor Taussig, after two years' absence, comes back to strengthen the Department of Economics; Professor Kittredge and Assistant Professor F. N. Robinson discuss Germanic and Celtic Religions; Dr. Chase lectures on the History of Greek Vase Painting; Mr. Whittemore offers a course in Celestial Mechanics; Dr. Morse considers the Theory of Photography; Dr. Dixon offers to conduct the study of selected texts in the languages of American Indians; Mr. R. T. Fisher and Mr. J. G. Jack give courses in Forestry. It is a matter of regret that the number of courses in the Fine Arts remains disproportionately small. Expansion in this Department becomes almost a necessity.

DATE OF ISSUING THE ELECTIVE PAMPHLET.

Among the larger universities, Harvard has always been late in the publication of its courses of study. Believing it important that the Announcement of the Courses of Instruction for any academic year should be made some weeks before the close of the preceding academic year, the Committee on Instruction succeeded in issuing

the elective pamphlet much earlier than usual. Such an early issue makes necessary some changes in later editions, but is of great advantage to all three schools under the Faculty of Arts and Sciences. It is of peculiar advantage to the Graduate School.

ADMISSION REQUIREMENTS IN MUSIC.

In the course of the academic year, the Faculty added both Harmony and Counterpoint to the optional subjects in the requirements for admission to Harvard College and the Lawrence Scientific School. Harmony is an elementary subject, counting two points; and Counterpoint is an advanced subject, counting two points. To meet the needs of students who have passed the admission requirement in Harmony, a new elective course (Music 1a) has been established in that subject; the old course for beginners (Music 1) still continues.

HARVARD COLLEGE AND THE COLLEGE ENTRANCE EXAMINATION BOARD.

In my last report I suggested, as others have done, that the Faculty might well consider the relation of the Harvard admission examinations to the examinations conducted by the College Entrance Examination Board. Harvard College has steadily opposed admission by certificate, and has steadily refused to admit as Freshmen any candidates that have not passed admission examinations which it has itself administered. It has frequently conferred with other colleges in behalf of certain common requirements for admission; but it has made its own examination papers, read its own examination books, and voted on the admission or rejection of its own candidates. When, a dozen years ago, the Committee on Admission from Other Colleges had admitted as Freshmen a few Sophomores from colleges of good standing, the practice was promptly stopped, as by common consent objectionable. The one exception to the strict rule of Harvard examinations for Harvard candidates is the crediting of persons who hold Yale preliminary certificates with such elementary examinations as they have passed at Yale, provided they pass corresponding advanced examinations at Harvard. If, for example, a candidate has a Yale certificate in plane geometry, he is credited with that subject at Harvard on passing the Harvard examination in solid geometry; if he has a Yale certificate in the elementary part of the examination in Greek, he is credited with elementary Greek at Harvard on passing the Harvard examination in advanced Greek. The Harvard admission examinations, theoretically at any

rate, differ from many other examinations in testing not so much what a boy has done as what he can do. It is this principle that has made them recognized by teachers generally as hardest to pass and highest in their standards, and as doing important service to education in America. The Faculty has felt sure that many other examinations, which on paper are as hard or harder, are different in principle and in results; and it has feared that any kind of examination trust might jeopardize the principle which it has been years in establishing and maintaining. It has believed that in keeping entire control of its own examinations it has kept, as it could keep in no other way, the power of showing, undimmed by intercollegiate politics or by bewildering compromise, a Harvard ideal in education. Strongly sympathizing with these views, I believe, nevertheless, that a more liberal policy toward the examinations of the College Entrance Examination Board would, in the long run, be helpful, not merely to the schools, but to Harvard College itself, since the present policy cuts off from Harvard College many an enterprising youth who must take his chance of preparation in a high school able to fit boys for Harvard, but outside of direct Harvard influence, and unable to provide a special kind of work for one or two Harvard candidates. The papers produced by the College Board are certainly hard enough, if they are taken seriously, to satisfy Harvard requirements; and Harvard College may readily make sure that in the examination books of Harvard candidates the questions and the answers shall be taken seriously. Thus, still keeping examinations of its own, Harvard College need shut out no boy who could appreciate its advantages and would make good use of them. Incidentally, the recognition of the College Examination Board by Harvard College would be of service to Radcliffe College, whose numbers and traditions are not so strong as Harvard's, and whose "feeding schools" are less likely to provide special courses for its admission examinations. I need hardly say, however, that I am now advocating the change in behalf of Harvard College and young men—not of Radcliffe College and young women.

HONORS IN LITERATURE.

In January the Faculty adopted an important proposition of the Divisions of Ancient and Modern Languages in regard to a new form of Honors. These Honors are called Honors in Literature, and are open to undergraduates; that is, to candidates for the degree of Bachelor of Arts. In the language of the announcement, the purpose of these Honors in Literature is to "offer in addition to the existing

schemes for Honors a plan that will encourage undergraduates to combine reading in the classics with reading in the modern languages. It is desired to emphasize in this way the underlying unity of literary study, and especially the interdependence of classical and modern literature." An important part of the scheme is the recognition of work done outside of college courses. The student must have considerable attainments in at least two languages and literatures beside his own—one ancient and one modern. In each case, he must show a good reading knowledge of the language, acquaintance with the general history of the literature, and a thorough study of a subject from the literature.

The Divisions have in mind the kind of student who should always have been a candidate for Honors, but has seldom or never found the right Department in which to apply. Such a student may be better educated in literature than many of those who have specialized so minutely as to become suitable candidates for Honors in a single Department of linguistic and literary study.

THE PRESENT CONDITION OF HONORS.

As has been frequently said, the condition of Honors in Harvard University is deplorable. The number of candidates is absurdly small in proportion to the number of earnest and able students; and the disproportion leads to the belief that there is something radically wrong in our present requirements. One of the most important problems before the Faculty of Arts and Sciences is the production of a scheme of requirements for Honors which is likely to interest every earnest and capable student.

In June the Faculty voted on the recommendation of Professor Morgan "that the committees administering Honors be requested to consider the present requirements for them, and to report whether it is expedient to make changes and new proposals with a view to the encouragement of candidacy, and especially whether the attainment of Honors might be made part of the qualifications for a degree." On this matter no definite action has yet been taken.

REQUIREMENTS FOR A.M.

In November, 1902, on the motion of Professor von Jagemann, the Faculty voted:—

That the Administrative Board of the Graduate School be requested to formulate and report to the Faculty a plan for a change in the requirements for A.M., to the effect that this degree may henceforth be obtained for high attainments in a chosen field, to be tested by

special examination and other suitable means, without reference to the courses the candidate may have taken here or elsewhere, and the marks he may have obtained in them; provided only that he holds the degree of A.B. of Harvard College, or a similar degree from some other college of good standing, and that he has fulfilled the statutory requirements of residence.

In April, 1903, the following new statement of the requirements for the degree of A.M. was formally adopted:—

The ordinary requirement for the degree of MASTER OF ARTS for a graduate of a college or scientific school of good standing consists of *at least one year of residence and study devoted to advanced work approved by the Administrative Board of the Graduate School as affording suitable preparation for the degree and completed with high credit.* Other persons will be admitted to the degree on conditions to be determined in each case.

The programme of study for the degree of Master of Arts must form a consistent plan of work pursued with some definite aim, though it need not lie wholly in one Department or field; this work may be done either in, or in connection with, the regular courses of instruction, or independently of them. The programme is ordinarily committed to the proper Division Committee on Honors and Higher Degrees for its consideration and approval.

Applications for the degree of Master of Arts will be received as late as *the fifteenth day of January* of the academic year in which the degree is to be taken; but candidates are urged to file their applications at the beginning of the year or earlier, so that they may receive timely advice with reference to the work that will be expected of them for the degree. These applications should be addressed to the Dean of the Graduate School.

This change in the requirements for the degree of A.M. will be of great advantage to the Graduate School. It does away with much that is technical in the rating of our students, and gives the ablest men in good colleges the opportunity that they deserve. Already its effect is seen in the number and in the quality of students in the Graduate School.

THE DEGREE OF A.B. IN THE GRADUATE SCHOOL.

For some years one of the rules in regard to the candidates for the degree of A.B. has read as follows: "In order to be recommended for the degree of Bachelor of Arts, a student, unless he be a member of the Graduate School, must have been registered in Harvard College as a candidate for that degree at least one academic year." This rule was made to prevent sudden applications of special students in the College, and of students in the Lawrence Scientific School, for the degree of A.B., for which they have not nominally been candi-

dates. The exception for members of the Graduate School has enabled graduates of other colleges, who might have registered in the Senior Class, to join the Graduate School while doing undergraduate work; and it has also enabled Harvard Seniors who in three years have finished the work for the A.B. to register as graduates before receiving that degree. The newly adopted rule of the Faculty, enabling all students who have actually done in three years the work for the A.B. to graduate without delay, has reduced the number of Harvard undergraduates who wish to take the A.B. in the Graduate School; and the newly adopted requirements for the degree of A.M. have encouraged the better men from other colleges in the pursuit of the Master's degree rather than the Bachelor's. Thus the A.B. in the Graduate School has seemed likely to degenerate into a "consolation degree," given to unsuccessful candidates for the A.M., who have nevertheless done a decent year's work, and who might, if previously registered in Harvard College, have received the degree of A.B. as Seniors. Both the admission to the Graduate School of students who are not graduates, and the awarding of the Bachelor's degree to students who become candidates at the eleventh hour because they can get nothing better, have seemed to the Faculty harmful alike to the Graduate School and to the College. Accordingly, on the recommendation of the Administrative Board of Harvard College, and with the approval of the Administrative Board of the Graduate School, the Faculty voted: That the terms of the conditions of candidacy for degrees be amended by striking from the fifth paragraph of page 469 of the Catalogue for 1902-03 the phrase, "unless he is a member of the Graduate School (see page 471)," and from page 471 the last paragraph, "A student in the Graduate School," etc.; that any other phraseology in the description of degrees at variance with these terms as amended be made to agree herewith, and that this change go into effect at the beginning of the academic year 1904-05. To this vote was attached, on the motion of Professor J. M. Peirce, a proviso that "a student of another Department of the University who wishes to transfer his registration to the Senior Class of Harvard College may do so at any time not later than the Christmas recess."

INFORMATION FOR INSTRUCTORS.

For some years the younger instructors have suffered for lack of information in regard to the conduct of their courses. It is the policy of the University to give every instructor much freedom in

the use of his own methods; but some rules are necessary to make clear the relation of an instructor to the Office in University Hall. If, for example, an instructor admits a student to his course without communicating with the Office, and the Office is held responsible for records of all the students in every course, the result is confusion. A Committee on Information for Instructors, appointed two or three years ago, made its first report last year. The report is in the form of a circular sent to all instructors under the Faculty of Arts and Sciences. It gives information of which much was formerly in the Regulations but dropped out of the Regulations when they were reduced to rules for students. The circular is designed to tell what the instructors, new or old, should know about the machinery of lectures and recitations, of reports for absence, of examinations and other tests, of admission to college courses, and, in general, of their relation to the Faculty and to the several administrative officers.

THE LARGE LECTURE COURSES.

In my last report I referred to the appointment of a committee of the Faculty which should consider ways of making the instruction in Harvard College more efficient; and I called attention to the need of more assistants in the large lecture courses. The committee, consisting of nine persons, paid special attention to the large lecture courses, since these courses are often regarded as a weak spot in Harvard instruction. The investigations and deliberations of the committee occupied more than a year; its data were the replies of two hundred and forty-five instructors and seventeen hundred and fifty-seven students to carefully worded questions in its circular letter; and its conclusions were unanimous. In its report, which is now before the Faculty, it maintains that in the large lecture courses the amount and the thoroughness of the work should be increased; that assistants of the highest quality should be employed; and that no assistant should have charge of more than eighty men in all, or of more than twenty men in a single section. How to meet the cost of lecture courses thus reorganized it is now impossible to see; but if the large lecture courses are to have more than an uncertain stimulating value some reorganization must come.

L. B. R. BRIGGS, *Dean.*

THE COLLEGE.

TO THE PRESIDENT OF THE UNIVERSITY :—

SIR, — I have the honor to submit to you my report on the condition of Harvard College for the academic year 1902–03.

The total number of students at the time the Catalogue went to press was twenty-one hundred and nine, divided as follows :—

Seniors	381
Juniors	420
Sophomores	578
Freshmen	608
Total number of Undergraduates	1987
Special Students	122
Total	2109

The registration in 1902–03, compared with the figures of the preceding year, shows a net gain of one hundred and twenty-six :—

	Gain.	Loss.
Seniors	35	..
Juniors	8	..
Sophomores	45	..
Freshmen	57	..
Special Students . . . . .	..	19
	145	
	19	
Net gain	126	

During the year the College lost by death the following students :—

Theodore Gooding, '05, Died January 29, 1903.
 Arlowe Kingsbury Miller, '06, . . . Died April 20, 1903.
 William Arthur Pennell, '04, . . . Died June 7, 1903.
 George Herbert Evans, '06, Died August 10, 1903.
 Charles Shattuck Fletcher, '04, . . Died September 13, 1903.
 William Everson Cobb, '05, Died September 19, 1903.

At Commencement, five hundred and fifteen students, of whom three hundred and twenty-one were registered as Seniors, received the degree of Bachelor of Arts, as against four hundred and twenty-seven, of whom three hundred and eight were registered as Seniors in 1902. This considerable increase was in part due to a new provision of the President and Fellows whereby a candidate for the degree who has completed the requirements therefor at the end of three years may take his degree then but have his name inserted in the *Quinquennial Catalogue* in the list of the class graduating four

years from the time he entered. This practice was recommended by the Faculty, May 5, 1903, and was established by vote of the President and Fellows, June 1, 1903. In accordance with this provision the degree of Bachelor of Arts was conferred upon forty-six members of the Class of 1904. The number of students upon whom the degree of Bachelor of Arts was conferred in accordance with former practices of the governing boards is four hundred and sixty-nine. The new provision seems in every way admirable. By means of it students may receive the degree when their work for it is done and still preserve what many value most, official recognition of their social association with the class of their undergraduate life. The practice of securing leave of absence, of which so many have hitherto availed themselves, now becomes unnecessary, although this will doubtless continue in the cases of those men who register in another department of this University; the student going elsewhere finds his diploma serviceable. Furthermore, the student who takes advantage of the provision secures in the *Quinquennial Catalogue* a permanent record of his having completed his work in three years, for against his name is inserted the date at which he took his degree. His pride in this may be as great as heretofore has been the ingenuity of those who have had to explain why there appears against their names a date a year or more later than the date of their class. This action also accords with the practice of the Faculty in late years of associating a man who for any reason has been obliged to fall out of College and later returns and completes the requirements for his degree, with what he calls his own class, that is, the class which graduated four years from the time he entered, and of which he as a Freshman was a member. This practice is commendable, not only because it simplifies the work of the Class Secretaries and brings their records into accord with the records of the University, but also because it recognizes one of the most treasured parts of college life, the social side; for, when all is said, to be a graduate of the College means first of all belonging to an honored and well-loved brotherhood, and a man's class the particular set who will be most interested in the enumeration of his babies and the story of his life.

Of the students registered in the Class of 1904 during the academic year 1902-03 there were at Commencement, 1903, including the forty-six already mentioned, one hundred and thirty men who had completed the requirements for the degree. (No account is here made of those men who will finally be members of the Class of 1904 but who were at that time held back in the Sophomore Class, 1905, on

account of admission conditions.) The records of the Class of 190 show that one hundred and ninety-nine students received the degree on three or less years' work in Harvard College:—

Three years	136
Three years plus one and a half Summer courses (in 1902)	3
Three years plus one Summer course (in 1902)	2
Three years plus one-half a Summer course (in 1902)	5

Admitted by the Committee on Admission from Other Colleges:—

Registered three years	10
Registered two years	10
Registered one year	26
Graduate Students registered one year	6
At Harvard Freshman and Senior year, at Chicago Univ. two years	1
	<u>199</u>

From this number, one hundred and ninety-nine, should be subtracted the number of students coming from other colleges, for they devote practically in every case at least four if not more years to college work. The total number, therefore, of men in the Class of 1903 who actually completed the work in three years, counting all work which they anticipated at the admission examinations and work in the Summer School, is one hundred and forty-six. These figures show how strong is the tendency at Harvard at the present time to complete the work for the degree of Bachelor of Arts in three years, but the conclusion by no means should be drawn that men give up university work at the end of three years: a few of them go into business, but by far the greater proportion carry on professional or graduate studies either here or at another university.

The next table shows the registration of those who received degrees in 1901, 1902, and 1903, but who were not registered as members of the Senior Class:—

	1901.	1902.	1903.
On leave of absence all the year	18	47	43
On leave of absence first half-year	1	..	6
On leave of absence second half-year . . . . .	..	15	33
Graduate Students	13	9	6
Registered in Law School	27	20	30
Registered in Medical School	7	7	7
Registered in Dental School	1	..	..
Registered in Divinity School . . . . .	..	1	..
Registered in Scientific School	2	7	6
Special Students	3	1	..
Registered in Junior Class	8	6	11
Registered in Sophomore Class	8	6	6
Registered in Senior Class of 1900	2	..	..
	<u>90</u>	<u>119</u>	<u>148</u>
To be designated as 1904 in the <i>Quinquennial</i> . . . . .	..	..	46
			<u>194</u>

Deducting the forty-six students to be entered in the Class of 1904, the number was this year one hundred and forty-eight, an increase of twenty-nine over the number in 1902. The number of those taking leave of absence without registering in any other department of the University, exclusive of the forty-six already enumerated, increased from sixty-two in 1902 to eighty-two in 1903.

The losses and gains in the three younger classes between November, 1902, and November, 1903, are shown in the following tables:—

	November, 1902.	Loss.	Gain.	November, 1903.
Class of 1904 . .	(Juniors) 420	183	89	(Seniors) 326
Class of 1905 . .	(Sophomores) 580	200	47	(Juniors) 427
Class of 1906 . .	(Freshmen) 607	182	154	(Sophomores) 629
		515	290	

Net loss in the three classes between Nov., 1902, and Nov., 1903, . . . 225
(109 more than in 1902)

	Class of 1904.	Class of 1905.	Class of 1906.	Total for three classes.
LOSSES.				
Left College before the end of the year . .	12	22	30	64
Left College at the end of the year	164	35	19	218
Were "dropped" and left College	1	9	19	29
Entered a lower class	4	88	54	146
Entered a higher class	2	46	10	58
Total loss	183	200	132	515
GAINS.				
From higher classes	8	9	90	107
From lower classes	45	10	..	55
Newly admitted	36	28	64	128
Total gain	89	47	154	290
Net loss	94	153	..	225
Net gain . . . . .	..	..	22	..

From the present Junior Class, 1905, eighty-eight students were dropped to a lower class as against seventy-four in the preceding Junior Class, 1904. This indicates that thus far the raising of the standard for promotion, which was first applied to the Class of 1905,

has caused no serious increase in the number of "dropped" students. In October, 1903, before the final adjustment of some records had been made, an examination of the records of students registered in the Sophomore Class showed that fifty-two men were held back in this Class on account of admission conditions, twenty-five on account of a low record, and seventeen by a combination of the two. The total of men newly admitted to these three classes this year is one hundred and twenty-eight as compared with one hundred and thirty-two admitted to the corresponding classes last year.

The next table shows the losses and gains in the number of Special Students since December, 1902:—

In attendance, December, 1902	122
Left College before the end of the year	20
Left College at the end of the year	43
Entered a College class	26
Total loss	89
Reentered College as Special Students, 1903	33
Newly admitted	106
Total	139
Net gain	17

The net gain is due to an increase in the number of students newly admitted. The number of those entering a College class remains practically as last year.

The Freshman Class of 1902-03 showed an unexpected gain of fifty-eight members, that of 1903-04 an expected decrease to the normal number:—

Admitted by examination in 1903	458
Admitted by examination before 1903	30
From a higher class	61
" the Special Students	2
" the Lawrence Scientific School	5
Total	556

The sixty-one students admitted from a higher class are made up of fifty-four "dropped" Freshmen from the Class of 1906, and seven other members of that class who withdrew from it before the end of the last College year.

The following table gives the number of students transferred from the Lawrence Scientific School to a College class at the beginning of the year 1903-04. As compared with the number thus transferred at the beginning of the year 1902-03 the table shows an increase of five.

Freshmen	5
Sophomores	11
Juniors	1
Seniors	7
Total	24

Sixty candidates who took in June some of their final examinations for admission, intending to postpone the remainder until September, did not complete this examination in September: one of these was transferred to the Lawrence Scientific School as a preliminary candidate; of the remaining fifty-nine, eight passed in so few subjects that they were obliged to take all of their examinations over again in September; and three, who might have gone on, preferred to try all of their examinations again in order to secure a better record. Fifteen, rejected in June, took their examinations again in September; and twenty-eight who registered as postponing candidates but who passed in a sufficient number of points to entitle them to admission were allowed to change their registration, and received admission certificates. Notice that such a change would be allowed was sent to most of these candidates from the Office because the Committee on Admission Examinations is anxious, for the good of the students, to have them enter with as few admission conditions as possible. These twenty-eight had postponed but a few points and had passed twenty or more; most of them, however, had admission conditions, to try to remove which they were forbidden under the rule that a postponing candidate may not try over in September an examination in which he has failed in June. The examinations in which these candidates had failed together with the work they postponed amounted in each case to no more study than a student can profitably carry on during the summer, and the result of this change in registration was in several cases an improvement in the record at the beginning of the Freshman year. Seven who took examinations for Harvard College were later admitted to the Lawrence Scientific School, and three who had been admitted to the Scientific School were afterward admitted to Harvard College. Ten who presented themselves as final candidates were allowed, after the examinations, to count a part of the examinations they had passed for a preliminary certificate. Five preliminary candidates who took their examinations for Harvard College became candidates for the Scientific School. One, rejected in June, was changed to a postponing candidate for the Lawrence Scientific School, and eight boys, either immature or sick, were allowed to add to a preliminary certificate.

Six hundred and five candidates, fifty-two less than in 1902, took

Final Examinations. Of the six hundred and five, four hundred and twenty-one had Preliminary Certificates; fifty-nine divided the examinations between June and September; forty-nine took all of their examinations in June; thirty-eight took all in September; thirty-seven who had a Preliminary Certificate divided their Final Examinations between June and September in accordance with the new rule of the Faculty allowing a three-part division of the examination. Of this new provision a good many schools were ignorant, and on this account the Chairman of the Committee, with the consent of various members who were consulted individually after the Committee had separated, allowed, with the approval of the masters of the schools concerned, thirteen rejected candidates, who had they known of the provision would have taken advantage of it, to become postponing candidates. Five preliminary candidates were, with the approval of the head masters of their schools, allowed to become postponing candidates:—

	Admitted.	Admitted "Clear."	Rejected.
June	412	205	38
September	126	29	29
Total	538	234	67

Of the six hundred and five candidates, four hundred and fifty-two offered ancient history rather than modern; sixty modern rather than ancient; forty-nine both ancient and modern; seventeen ancient and advanced European; nine modern and advanced European; one modern and the history of a period; one ancient and the history of a period; and sixteen neither.

The next table shows, in order of the number of choices, the offerings of advanced subjects: Latin as usual holds the first place.

1901.	1902.	1903.
1. Latin.	Latin.	Latin.
2. Greek.	French.	French.
3. French.	Greek.	Greek.
4. Latin Composition.	German.	German.
5. German.	Log. and Trig.	Log. and Trig.
6. Greek Composition.	History.	Solid Geometry.
7. Log. and Trig.	Solid Geometry.	History.
8. Solid Geometry.	Algebra.	Algebra.
9. Algebra.	Astronomy.	Astronomy.
10. History.	Physica.	Physica.
11. Physics.	Meteorology.	Meteorology.
12. Analytic Geometry.		
13. Meteorology.		

The next table gives the details on which the foregoing table is based : —

Number of candidates offering	1901.		1902.		1903.	
	Per cent.		Per cent.		Per cent.	
Advanced Greek	319	51.62	317	48.25	279	46.12
Advanced Latin	489	79.13	541	82.34	504	83.31
Advanced German	123	19.9	157	23.90	182	30.08
Advanced French	259	41.91	401	61.04	344	56.86
Advanced History	48	7.77	82	12.48	78	12.89
Logarithms and Trigonometry	101	16.34	97	14.76	100	16.53
Solid Geometry	82	13.27	77	11.72	85	14.05
Advanced Algebra	49	7.93	71	10.81	51	8.50
Advanced Physics	7	1.13	2	.30	4	.86
Astronomy	0	.00	6	.91	6	.99
Meteorology	2	.32	1	.15	2	.33

The next two tables show, for each study, the percentage of failure (*A*) in the complete records of the candidates, including the records of their successful Preliminary Examinations, and (*B*) in their records at Final Examinations only : —

(<i>A</i>)	1898.	1899.	1900.	1901.	1902.	1903.
ELEMENTARY STUDIES.						
English	8.7	9.6	10.2	9.42	6.25	8.43
Greek	7.86	10.6	4.	3.18	3.16	3.55
Latin	6.75	4.65	6.	3.91	5.91	6.77
German	17.07	22.97	17.85	16.67	17.82	11.19
French	3.54	6.65	7.6	7.05	7.71	7.09
History (Ancient)	9.41	5.	8.2	10.46	12.14	10.71
History (Modern)	7.	10.	7.44	16.54	16.67	6.49
Algebra	14.56	16.55	14.	14.97	10.44	10.70
Geometry . . . . .	. .	. .	24.	7.06	13.83	11.11
Plane Geometry	26.29	25.7	26.60	16.38	21.86	17.03
Physics	12.65	18.53	18.44	17.07	17.97	14.38
Chemistry	15.29	18.48	12.	10.82	6.90	11.11
Physiography . . . . .	. .	. .	11.	33.33	64.29	57.89
Anatomy . . . . .	. .	. .	20.	50.	27.27	50.

	1898.	1899.	1900.	1901.	1902.	1903.
ADVANCED STUDIES.						
Greek	12.5	14.28	13.16	12.96	11.04	9.32
Latin	15.73	20.	23.45	21.74	27.36	20.42
German	14.18	26.61	30.	31.21	31.85	28.57
French	17.78	18.37	26.47	27.57	22.19	25.29
History . . . . .	.	.	41.66	45.1	35.37	42.31
Logarithms and Trigonometry . .	41.60	26.17	23.86	28.85	25.77	23.
Solid Geometry	26.76	20.98	22.58	27.78	41.56	44.71
Algebra	43.14	35.	41.17	48.	56.34	19.61
Physics	16.67	37.5	37.5	71.43	100.	75.
Astronomy . . . . .	.	.	100.	.00	66.67	66.67
Meteorology . . . . .	.	.	50.	100.	.00	.00

(B) ELEMENTARY STUDIES.			ADVANCED STUDIES.		
	1902.	1903.		1902.	1903.
English	8.32	11.39	Greek	11.40	9.59
Greek	11.36	11.36	Latin	29.02	21.33
Latin	14.67	15.50	German	36.76	31.52
German	30.86	24.86	French	27.73	33.33
French	17.53	17.24	History	36.25	44.59
History (Ancient) . .	23.16	18.75	Log. and Trig. . . .	26.88	24.21
History (Modern) . .	24.69	12.20	Solid Geometry . . .	43.24	47.50
Algebra	21.	26.56	Algebra	65.57	20.83
Geometry	18.57	18.37	Physics	100.	75.
Plane Geometry . . .	29.48	22.34	Astronomy	66.67	66.67
Physics	20.43	16.49	Meteorology . . . . .	.00	.00
Chemistry	8.	13.04			
Physiography	64.29	57.89			
Anatomy, etc.	80.	50.			
Harmony . . . . .	.	66.67			

As usual the greatest fluctuation in percentages is in the subjects offered by fewest candidates.

Seven hundred and nine candidates (eighty-five more than in 1902) took Preliminary Examinations; of these, five hundred and seventy-three (seventy-nine more than in 1902) received certificates:—

Eight points	54
Nine "	7
Ten "	80
Eleven "	7
Twelve "	121
Thirteen points	11
Fourteen "	128
Fifteen "	6
Sixteen "	71
Seventeen "	10
Eighteen "	45
Twenty "	18
Twenty-one points	1
Twenty-two "	8
Twenty-three "	1
Twenty-four "	2
Less than eight points	3
Received certificates	573
Failed	136
Total number of candidates	709

The next table gives the percentages of failure in Preliminary Studies:—

ELEMENTARY.			ADVANCED.		
	1902.	1903.		1902.	1903.
English	33.45	39.39	Greek	35.71	14.29
Greek	8.78	8.57	Latin	60.47	58.90
Latin	31.87	23.54	German	26.83	40.
German	24.48	27.47	French	32.28	35.62
French	19.54	20.59	History	50.	83.33
History (Ancient)	27.73	27.79	Log. and Trig.	31.25	37.50
History (Modern)	30.51	26.87	Solid Geometry	57.14	73.68
Algebra	15.63	25.70	Algebra	58.33	60.
Geometry	4.35	21.28	Physics	Not off'd	
Plane Geometry	41.02	26.08	Astronomy	Not off'd	
Physics	21.78	19.08	Meteorology	Not off'd	
Chemistry	5.	30.43			
Physiography	100.	50.			
Anatomy, etc. . . . .	.00†	57.14			
Harmony . . . . .	..	.00*			

† Two candidates only.

* One candidate only.

In printing statistics of "Credits" won at the examinations for admission to College, I give (A) the "Credits" won this year at Final Examinations; (B) those won this year and some earlier year by the Final Candidates of this year; and (C) those won this year at Preliminary Examinations:—

(A) ELEMENTARY STUDIES.			ADVANCED STUDIES.		
	June.	Sept.		June.	Sept.
English	9	1	Greek	46	0
Greek	12	1	Latin	54	0
Latin	21	2	German	20	0
German	20	0	French	10	0
French	10	2	History	3	1
History (Ancient) . . .	27	4	Log. and Trig.	18	2
History (Modern) . . .	3	0	Solid Geometry	6	2
Algebra	43	7	Algebra	5	3
Geometry	9	2	Physics	0	0
Plane Geometry . . .	21	6	Astronomy	0	0
Physics	107	14	Meteorology	0	0
Chemistry	28	2			
Physiography	0	0			
Anatomy, etc.	0	2			
Harmony . . . . .	..	1			
	310	44		157	8

(B) ELEMENTARY.		ADVANCED.	
English	13	Greek	47
Greek	61	Latin	56
Latin	62	German	26
German	53	French	19
French	39	History	4
History (Ancient) . . .	50	Log. and Trig.	16
History (Modern) . . .	7	Solid Geometry	8
Algebra	132	Algebra	8
Geometry	17	Physics	0
Plane Geometry	46	Astronomy	0
Physics	140	Meteorology	0
Chemistry	38		
Physiography	0		
Anatomy, etc.	0		
	658		184

(C)	ELEMENTARY.		ADVANCED.
English	1	Greek	2
Greek	44	Latin	3
Latin	80	German	12
German	39	French	4
French	31	History	0
History (Ancient)	29	Log. and Trig.	0
History (Modern)	10	Solid Geometry	0
Algebra	189	Algebra	0
Geometry	5	Physics	0
Plane Geometry	18	Astronomy	0
Physics	46	Meteorology	0
Chemistry	8		
Physiography	0		
Anatomy, etc.	1		
	451		21

Experience with the three-part division of the examinations has been brief, but thus far in every way indicates that the new arrangement is highly advantageous not only to candidates but also to the College. The candidate with a Preliminary Certificate for but a few points, instead of carrying a heavy burden of studies throughout the summer, is enabled to make a fair adjustment of work between his final year of study and the summer vacation, and to get a better mastery of his subjects; and he stands a much better chance of securing admission without conditions. In so far as he is clear of admission conditions the College is freed from giving him instruction to remove conditions or having him devote to them as outside studies the time that he can more profitably spend on his regular courses; and the probability that he will be physically fit for his work, not exhausted by too heavy a burden of summer work, is greatly increased. It is to be hoped that schools will take advantage of this provision in the cases of all candidates about whose preparation to take all of their Final Examinations there is doubt.

The members of the Administrative Board for the year 1902-03 were Professors Hurlbut, Willson, C. P. Parker, Gross, Grandgent, Gardiner, Coolidge, Johnson, Ward, Gulick, Palache, F. N. Robinson, Woodworth, C. H. C. Wright; Messrs. Cram, Cobb, J. G. Hart, and Whittemore.

During the year two students were expelled, — one, provisionally admitted from another College to the Junior Class, for forging

the credentials on which he secured admission; the other, a Freshman, for thefts from lockers in the Gymnasium, the Weld Boat Club, and the Locker Building at Soldier's Field. One Freshman was dismissed for handing in as his own in a course in Fine Arts the drawing of another student and for lying. Ten students were suspended: four, one a Special, one a Sophomore, and two Freshmen, for dishonesty in written work; five, Freshmen, for communicating in an examination; and one, a Sophomore, for leaving Cambridge before the appointed time at the Christmas recess. The Board closed the probation of one "dropped" Freshman, one Freshman, one Sophomore, and one Junior, for neglect of work, and of one Sophomore for taking an unauthorized vacation. Eight students withdrew under pressure of varying degrees of intensity.

On recommendation of the Administrative Board and with the approval of the Administrative Board of the Graduate School, the Faculty voted to amend the terms of the conditions of candidacy for degrees so that, beginning with the year 1904-05, the degree of Bachelor of Arts shall no longer be given for work in the Graduate School. This degree has in several cases been taken by students of the latter School who found during the year that they could not win the degree of Master of Arts, and, therefore, took the degree of Bachelor of Arts as a consolation. The Board was of opinion that a candidate for the degree of Bachelor of Arts should be under the jurisdiction of Harvard College, and that from a social point of view it was unfair to the class to put into it at the time of its graduation students who had had no association with it.

The beginning of the year saw the Stillman Infirmary ready for use, one of the most beneficent and serviceable gifts the University has ever received. Only those who have seen sick boys in the forlornness of a college room, ministered to by kind-hearted but inexperienced undergraduate friends, can fully appreciate its value. Although the attempt to secure four-dollar subscriptions, on the insurance plan, in number sufficient to pay the running expenses failed, the failure was due, I believe, not to lack of willingness but to carelessness in responding. The sentiment of students, so far as it can be learned by informal talk, is in no way opposed to the small assessment necessary for this purpose.

The number of scholars in the first group of scholarship holders was this year sixty as compared with forty-one in the year 1901-02; of the sixty, sixteen held honorary scholarships and forty-four scholarships with stipend as against thirteen holding honorary scholarships and twenty-eight scholarships with stipend the preceding

year. The percentage of holders of honorary scholarships has decreased. Of those holding scholarships in the second group forty-nine held honorary scholarships, forty-eight scholarships with stipend. The increase in the number of scholars in the first group is gratifying, but points at the same time to a condition that the Committee on Scholarships has for a long time deplored, the lack of an adequate number of scholarships with stipend, for the increase in the total number in the group is, in some part at least, due to the greater keenness in competition for scholarships of this sort. Every graduate of the College knows how mistaken is the idea, so commonly held by those who trust only to report, that the College has an abundance of money; but many graduates, especially those of the classes before the 90's, fall with the public into the error of thinking that the College has adequate resources to help all deserving students who must wholly or in part pay their way. A merely superficial examination of the facts will convince the investigator that this opinion is mistaken, but how greatly mistaken only those who are brought closely into contact with these men fully understand. Before the great increase in the number of students, in the early 80's, there was probably a sufficient number of scholarships for the really deserving men; but in the years since that time the growth in the funds for assisting students has not kept pace with the growth in numbers. Furthermore, the number of available scholarships has been reduced in order to assist the Graduate School; to its use have been transferred no less than twenty-five scholarships at one time devoted to students in the College. A comparison of the numbers of scholarships and students in 1884-85 with the numbers in 1902-03 is instructive. In 1884 there were for the ten hundred and six students in the College one hundred and twenty-two scholarships; in 1902-03, for the twenty-one hundred and nine students, one hundred and twenty-nine scholarships. (It must also be borne in mind that of the one hundred and twenty-nine scholarships many are regularly taken from the open competition by those who have a special claim upon them under the terms of the gift.) Six and one-tenth per cent. of the students now, as compared with twelve and one-tenth then, receive scholarships with stipend. The considerable increase in the Beneficiary Funds, the Price Greenleaf and the Ames gifts, although somewhat reducing this difference in percentage, by no means make up for it. In 1902-03 the lowest rank on which a student won a scholarship was, in the Senior and Junior Classes, an average on four courses (the number prescribed for the Junior and Sophomore years on which

the winning of the scholarship was based), of A in two courses and B in two, and in the Sophomore Class an average on five courses (the number prescribed for the Freshman year), of A in one course and B in four. The grades of A and B on the present marking scale of the Faculty may roughly be defined as Honors and Honorable Mention respectively. Few will deny that a student whose work deserves honorable mention is worth a college education, yet these figures show that a student whose work averaged B — in other words, whose work deserved honorable mention — stood no chance of winning a scholarship; or, to look at the situation from another point of view, a student may be entitled to the degree of Bachelor of Arts *magna cum laude* and yet not to a scholarship. It is without doubt true that a deserving student is seldom obliged absolutely to give up the hope of an education at Harvard for lack of means. The employment bureau of the Chairman of the Appointment Committee, and the generosity of undergraduates, of teachers, and of friends of the College can be relied upon to supply the means to keep body and soul together, — and there is danger, everyone admits, that too much help may weaken a man's independence and self-reliance, — but it is just as true that the constantly harassing uncertainty as to whence the money to meet the next bill is to come, and the necessity of taking from his studies a large amount of time to work to earn money prevent many a good man from getting the most profit from his courses.

B. S. HURLBUT, *Dean*.

THE LAWRENCE SCIENTIFIC SCHOOL.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,—As Dean of the Scientific School I submit the following report for the academic year 1902–03.

The number of students registered in this School during the academic year, as well as their distribution in classes and programmes, is indicated in the following tables:—

REGISTRATION BY CLASSES.

Class.	1901-02.	1902-03.
Fourth-Year	76	94
Third-Year	88	83
Second-Year	141	151
First-Year	157	136
Specials	87	120
Totals	549	584

SPECIAL STUDENTS.

Number of years in attendance.	1901-02.	1902-03.
One	59	91
Two	16	24
Three	6	3
Four	4	2
Five	2	0
Totals	87	120

REGISTRATION FOR ADMISSION EXAMINATIONS.

Year.	Preliminary.	Final.	Total.
1902	82	175	257
1903	96	176	272

DISTRIBUTION OF STUDENTS IN FOUR-YEAR PROGRAMMES.

Programme.	1901-02.	1902-03.
Civil Engineering	56	72
Mechanical Engineering	82	70
Electrical Engineering	49	61
Mining and Metallurgy	67	75
Architecture	29	35
Landscape Architecture	9	11
Chemistry	32	32
Geology	5	3
Biology	12	16
Anatomy, etc.	30	38
Teachers of Science	21	30
General Science	157	141
Totals	549	584

The variation in the number of students enrolled in the several programmes which is shown in the tables, though considerable, appears to have no especial significance except as regards that of General Science. In that four-year course there has been a progressive decrease from a total of 170 in the academic year 1900-01 to the numbers as indicated above for the two following years; as long foreseen by the officers of the School, the resort to this course is certain to be progressively reduced as the requirements for admission are brought nearer to those of Harvard College. A yet further reduction is to be expected in 1903, when the number of "points" required for admission to the College and the School will be the same.

In 1902 the number of "points" required for admission to the Scientific School was twenty-three, or three less than the number admitting to the College without conditions. In 1903 the demands in the way of preparation became equal, so that the effect of this long existing difference in the entrance requirements on the resort to the School now begins to disappear. Even now there remain certain slight variations in the studies which are required or may be offered for admission to the two schools; yet so far as the requirements can be weighed they are essentially equal, and will not, because of these differences, notably affect the choice of students as to which of the two schools they will enter. That choice will hereafter be determined either by preference for a group system over a purely elective system, or for the degree of Bachelor of Science over that of Bachelor of Arts.

The fact that with few and unimportant exceptions all the studies prescribed in the programmes of the Scientific School may be taken by students registered in the College, already leads many to enter the academic department, and there more or less nearly to follow some one of the four-year courses of study leading to the degree of Bachelor of Science. In many instances these students at the end of their Junior year transfer their registration to the Scientific School, taking their degree in Arts at the end of the first year of such residence, and that in Science at the end of the second or third year, in Engineering or Mining, etc. The increase in this custom of resorting to the College for three years as a preparation for work in the Scientific School has been such as to suggest that in the future this may be the usual method of gaining the Bachelor's degree in Science which will be followed by those who take the entrance examinations. Another indication which clearly points to the future work of the Scientific School is found in the increasing resort to its programmes of those who have had two or three years of training in

colleges which do not provide instruction in applied science. These young men are following in other colleges the same path that, as above noted, many students are betaking themselves to in our own. They are evidently guided by the same purpose, which is, while intent upon a professional career, to use a part of the five or six years they are to devote to preparation for it in seeking a share of general culture.

The above noted tendencies, indicated by the previous studies of a considerable and increasing number of those who resort to the Scientific School, clearly point to the conclusion that in time a large, if not the largest, part of its service will consist in providing instruction to men who have already had a college education. It is as yet too soon to make these conditions the basis of action, yet it may well be foreseen that in time they will require considerable rearrangement in the plan of the School.

The most important addition to the teaching resources of the School made during the academic year 1902-03 consisted in the establishment of a programme in Forestry. For some years there has been a demand for professional instruction in this subject in the University; a number of students have availed themselves of the numerous studies collateral to that subject, with the intention of resorting to some school of forestry for the technical part of their education. The Administrative Board of this School have hitherto been doubtful as to the expediency of establishing a four-year course leading to the degree of Bachelor of Science in Forestry, for the reason that in this country there was no considerable demand for the services of men trained in that art. The recent surprising development of the profession with us, due mainly to the work of the Federal Bureau of Forestry, has suddenly changed this situation. There is now a steady demand for trained foresters to serve the Federal government or the corporate or other owners of forests. So far, the addition to the instruction in matters relating to forestry is to be given by two instructors, Mr. Richard T. Fisher and Mr. J. G. Jack; Mr. Fisher will have general charge of the programme. From the existing resources ample provision can be made for instruction in all the collateral subjects required in the course. The Arnold Arboretum, the Bussey Institution, and the Botanic Garden afford excellent means of illustration. Thus, with two or three competent teachers in technical Forestry, the programme can be made efficient. The School is much indebted to Mr. Gifford Pinchot, Forester of the Department of Agriculture, for advice and assistance in the work of establishing this four-year course.

The discipline of the School remains as it has been for some years, in a satisfactory state; during the academic year 1902-03 no student was reported to the Faculty for any grave offence. One hundred and thirty-five were put on probation, ten for breach of rules and one hundred and twenty-five for failure to attain satisfactory grades; the probation of twenty-six students was closed.

During the year no student died, and the cases of serious illness were very few in number. The average number "signed off" in term-time was about eleven, or approximately two per cent. of those in attendance. The Stillman Infirmary has proved a very great advantage to those who were seriously ill and who could not be sent to their homes. The assurance that all within its walls were well cared for has been a great relief to the Dean.

N. S. SHALER, *Dean*.

ATHLETIC SPORTS.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,—I respectfully submit the following report on Athletic Sports for the year 1902–03.

The numbers engaged in the various sports have been ascertained by a systematic canvass of all students in the University. Circulars were sent out with blank spaces to be filled in by the students. Replies were received from those registered in the several departments, as follows:—

College	1648	out of 2109 = 78.1 per cent.
Scientific School	402	" 584 = 68.8 "
Graduate School	77	" 316 = 24.3 "
Law School	398	" 640 = 62.2 "
Medical School	327	" 445 = 75.7 "
Dental School	89	" 112 = 79.5 "
Divinity School	19	" 37 = 51.4 "
Bussey Institution	3	" 33 = 9.0 "
<hr/>		
	2963	" 4276 = 69.3 "

The numbers in the various sports and exercises were as follows:—

Foot-ball	456	Basket-ball	278
Base-ball	466	Hand-ball	607
Bowing	424	Gymnasium exercises	1622
Track games	306	Other exercises and sports	2183
Lawn tennis	1392	No exercise or sport of any kind	220
Cricket	63	Total	8956
Lacrosse	80	Names counted two or more	
Hockey	319	times	5993
Golf	540	Total separate individuals	2963

It will be observed that many students engage in more than one kind of sport or exercise, and it seems to be demonstrated that of those who replied all excepting 220 took fairly regular exercise of some kind during the year. It is apparently the custom for a large number of students to go to the gymnasium during the winter months, and to enter tennis or other lighter sports during the fall and spring months. Probably many who failed to reply to the interrogatories could be classified as men taking regular exercise. This list was prepared in the hope of shedding light upon the question of

prescribing some kind of physical training to all students, and it seems doubtful if there would be any substantial gain by a fixed requirement in connection with the degree.

Foot-ball. — During the year constant efforts were made to improve the conditions under which this game is played. They were directed, first, towards greater uniformity in eligibility rules in order to lessen the causes of disputes; and, second, towards a modification of the rules for playing, in order to reduce the risk of injury and to render the game more interesting to players and spectators. In connection with eligibility, an agreement was arranged between Harvard and Yale Universities by which all players, not only of foot-ball but also players in the other sports, should come under the same rules at both places. This agreement promises to lessen the suspicions which have prevailed in the past. It should promote a friendly feeling between the students and graduates of the two universities in connection with their athletic contests.

The rules for playing the game seemed to be more difficult to deal with, as all universities must necessarily play under the same rules, and, where so many are concerned, it is almost impossible to reach an acceptable understanding. The rules were, however, modified by the general rules committee, with the expectation of making a more open game, and, in consequence, one more interesting to the players and their friends.

The injuries during the year were not so great as in previous years, and few students came out of the season any the worse physically for having engaged in the sport. There is one phase of foot-ball, however, which should engage the attention of all college men, — that is, the promotion of honor and fairness upon the field, and in the preparation of teams. In the main the players are disposed to keep within the rules in their games, and if left to themselves or if brought into contact only with the best advisers, would probably in the end make foot-ball a game wholly unobjectionable. It is unfortunate that the game should be regulated and directed so entirely by coaches whose point of view is strategy. Under the present system, violation of the rules can be concealed from the spectators and even from the officials of the game, thus giving an advantage to unscrupulous players and coaches.

Other Sports. — There has been no change in the other sports worthy of note during the year. The Committee devoted some attention to the study of the minor sports with a view of lessening the absences from Cambridge during the winter. Some rule looking to the abatement of the winter sports may seem advisable, although

the young men who affect these kinds of sport, — such as basketball, fencing, and hockey, — are generally not those who take part in the other sports.

Grounds and Buildings. — During the early summer two pieces of property on the south side of Soldier's Field were added to the playgrounds, thus surrounding the entire property with streets or public reservations. These purchases will enable the University to continue the development of the Field in a very satisfactory manner. In the latter part of June ground was broken for the replacement of the old foot-ball stands by a Stadium to be built of concrete and steel. The money for this purpose was in part saved out of the athletic income and in part given by the Class of 1879. The Stadium was designed as to its architectural features by Mr. George B. de Gersdorff, under the advice of Mr. McKim; and as to its structural features by Professor L. J. Johnson, with the advice of Mr. J. R. Worcester. The work was prosecuted during the summer under the direction of Professor Johnson, without a contract for a lump sum, but by days' labor. This seemed on the whole the most satisfactory method of securing a good building, as it was very difficult to make any estimate of the cost of concrete built as designed. Up to September 1, when the year closed, the work had proceeded rapidly.

The construction of these stands will free the University from any anxiety as to fire or decayed wooden supports. A serious warning was conveyed by the destruction of one of the base-ball stands during a game between Harvard and Princeton. The largest stand on the field took fire and was wholly consumed within twenty minutes. Fortunately, the spectators were able to reach the ground without injury to anyone. Several times during the past few years small fires have been discovered and put out on the main foot-ball stands. The University is fortunate to have escaped any serious accident. It is hoped that the Stadium when completed may prove useful for other things besides athletics. It would be a good place for Class Day exercises.

IRA N. HOLLIS.

THE GRADUATE SCHOOL.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,—As Dean of the Graduate School I have the honor to submit my report upon the School for the academic year 1902–03.

The members of the Administrative Board were Professors C. L. Jackson, Davis, M. Warren, Lyon, von Jagemann, Channing, Kittredge, Münsterberg, and Böcher, and the Dean of the School. The members who had not been in service the previous year were Professors Lyon and Channing. The Board met eleven times in the course of the year.

The subjects to be considered in this report are, first, the membership of the School; secondly, the degrees for which recommendations were made at the close of the year, and the holders of those degrees; thirdly, fellowships and scholarships; and, fourthly, miscellaneous topics, and in particular recent legislation by the Faculty of Arts and Sciences with reference to the degree of Master of Arts. Statistics on many of these points are given in the tables:—

- I. Number and classification of students (Resident and Non-Resident; students doing full or partial work; fields of study; length of connection with the School; holders of Bachelors' and of higher degrees): 1900–01, 1901–02, 1902–03.
- II. Resident Students doing full work, and Non-Resident Students: 1886–1903.
- III. Percentage of students in their first and following years: 1897–1903.
- IV. Colleges and Universities represented, with degrees held: 1902–03.
- V. Percentage of students from other colleges: 1896–1903.
- VI. Percentage of Bachelors' degrees of different kinds: 1897–1903.
- VII. Colleges and Universities represented by four or more graduates in the School: 1898–99, 1899–1900, 1900–01, 1901–02, 1902–03.
- VIII. Birthplaces of Graduate Students: 1896–1903.
- IX. Residences of Graduate Students: 1899–1903.
- X. Recommendations for degrees in 1901, 1902, 1903.
- XI. Divisions and Departments in which recommendations for the higher degrees were made in 1903.
- XII. Age of Graduate Students recommended for the Masters' and Doctors' degrees: 1903.
- XIII. Age of Graduate Students recommended for the degree of Doctor of Philosophy: 1897–1903.
- XIV. Fellowships and Scholarships: numbers and classifications of applicants and appointees in 1901–02, 1902–03, 1903–04.

STUDENTS.

The number of students registered in the School for 1902-03 was three hundred and twenty-five, ten more than in the preceding year, seventy-seven less than in the current year (November, 1903). Besides these three hundred and twenty-five who were registered members of the School might be included fifty Seniors in Harvard College (Class of 1903) who in their Senior year were pursuing studies that had been approved for the degree of Master of Arts.

TABLE I. — NUMBER AND CLASSIFICATION OF STUDENTS.

	1900-01.	1901-02.	1902-03.
I. Resident Students doing full work in the School for the whole academic year . . .	226	218	216
Resident Students not doing full work or not working for the whole year as resident students	113	86	94
	— 339	— 304	— 310
Non-Resident Students holding fellowships .	14	11	15
Non-Resident Students not holding fellowships	0	0	0
	— 14	— 11	— 15
II. Students whose studies lay chiefly in *			
1. Semitic Languages and History	1	1	1
2. Ancient Languages (Classics and Sanskrit)	47	41	37
3. Modern Languages (including Comparative Literature)	75	70	74
4. History and Political Science	53	52	52
5. Philosophy (including Education)	65	41	50
6. Fine Arts (including Architecture) . . .	4	6	11
7. Music	1	1	0
8. Mathematics	20	17	22
9. Engineering	6	6	5
10. Physics	14	13	12
11. Chemistry	19	21	24
12. Biology	21	23	19
13. Geology	14	13	12
14. Anthropology	3	2	2
Unclassed Students	10	8	4
	— 353	— 315	— 325
III. First-year Students	189	157	175
Second-year Students	83	83	83
Third-year Students	52	36	36
Fourth-year Students	14	27	13
Students in a fifth or later year	15	12	18
	— 353	— 315	— 325

* For detailed statistics as to the number of Graduate Students enrolled in the various courses of instruction offered by the Faculty of Arts and Sciences, see the Report of the Dean, pp. 58-63.

IV. A.B.'s and S.B.'s of Harvard University and of no other institution	101	94	96
A.B.'s and S.B.'s (and holders of similar degrees) of other institutions and also of Harvard University	83	48	26
Students not holding the Harvard degree of A.B. or S.B.	219	178	203
	— 853	— 815	— 825
Students holding the Harvard degree of A.M., S.M., Ph.D., or S.D.	110	100	100
Students holding the Harvard degree of A.B. or S.B., but not of A.M., S.M., Ph.D., or S.D.	88	90	72
Students holding no Harvard degree in Arts, Philosophy, or Science	155	125	153
	— 853	— 815	— 825

Admission to the Graduate School is ordinarily granted to holders of the Bachelor's degree of colleges of good standing and to a few other persons of maturity. The colleges and universities that were represented in the School in 1902-03 are named in Tables IV and VII.

The foregoing table (Table I) exhibits the usual classification of the students of the School and is given for convenience of comparison for the three successive years, 1900-01, 1901-02, 1902-03. My comments on this table will have reference, first, to the members of the School in general and to the amount of work done by them; secondly, to their fields of study; thirdly, to their period of residence, and, fourthly, to the extent to which the School draws its members from Harvard University as contrasted with other institutions.

Of the Resident Students two hundred and seventy-six were in attendance throughout the whole year. Of this number two hundred and sixteen were doing what is technically called a full year of work. Sixty of those in residence throughout the year were doing partial work. Of the remaining thirty-four Resident Students ten entered the School after November 15, fifteen withdrew before February 15, and nine others before the end of the year.

Table II, which supplements Table I, gives the statistics since 1886-87, when such statistics were first recorded, of Resident Students doing full or partial work and of Non-Resident Students. The Graduate School contains two distinct classes of students: the first consists of men who are devoting all their time to their university work; the steady increase in the percentage of these men—from fifty-nine per cent. in 1886-87 to seventy per cent. in 1902-03—is an encouraging sign. But the second class, men who devote but a portion of their working time to studies in the Graduate School—clergymen, teachers in schools and colleges in eastern

TABLE II. — RESIDENT STUDENTS DOING FULL WORK, AND NON-RESIDENT STUDENTS: 1886-1908.

	1886-87.	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.	1892-93.	1893-94.	1894-95.	1895-96.	1896-97.	1897-98.	1898-99.	1899-1900.	1900-01.	1901-02.	1902-03.
Resident Students doing full work in the School for the whole academic year	38	48	50	62	62	108	127	162	161	175	194	171	218	227	226	218	216
Resident Students not doing full work or not working for the whole year as Resident Students	26	36	39	34	55	79	73	86	94	105	96	107	103	99	113	86	94
Whole number of Resident Students	64	84	89	96	117	187	200	248	255	280	290	278	321	326	339	304	310
Non-Resident Students holding fellowships	10	10	9	11	11	9	9	10	12	13	14	15	12	13	14	11	15
Non-Resident Students not holding fellowships	4	3	1	4	4	4	7	1	5	6	2	..	3	2	..	..	..
Whole number of Non-Resident Students	14	13	10	15	15	13	16	11	17	19	16	15	15	15	14	11	15
Whole number of students	78	97	99	111	132	200	216	259	272	299	306	293	336	341	353	315	325
Percentage of Resident Students doing full work for whole academic year	59	57	56	65	53	58	64	65	63	63	67	62	68	70	67	72	70

Massachusetts, and other professional men — is highly important. This number might well be much larger.

The group of Non-Residents in 1902-03 included, as for three years past, only holders of travelling fellowships.

The second division of Table I indicates in general the fields of learning and science in which the work of the students lay. As, however, many students did fringes of work in Departments outside their own, these statistics cannot completely show the choice of studies of Graduate Students. Exact information on this point is given in the Report of the Dean of the Faculty of Arts and Sciences (see above, pp. 55-83).

In 1902-03 the subjects of study arranged according to the number of students who specialized in them were: —

Modern Languages,	Geology,
History and Political Science,	Physics,
Philosophy (including Education),	Fine Arts,
Ancient Languages,	Engineering,
Chemistry,	Anthropology,
Mathematics,	Semitic.
Biology,	

As in previous years there was an almost equal division between the three great groups of the languages, ancient and modern (thirty-five per cent.), the historical and philosophical sciences (thirty-six per cent.), and the mathematical, physical and natural sciences (twenty-nine per cent.). More than two-thirds of the students in the Graduate School at this University are devoted to the pursuit of languages and literature, together with history, philosophy, and the fine arts; as against less than one-third who pursue mathematics and the physical and biological sciences. The persistence of these proportions through successive years is an interesting phenomenon.

There are slight differences between the several Divisions in respect to the proportion of their students who receive higher degrees at the close of the year. In the Divisions in which five or more men took higher degrees at Commencement (see Tables X and XI), we find that in Geology five-sixths of the students received such degrees; in Physics, two-thirds; in Ancient Languages, in Modern Languages, in History and Political Science, and in Chemistry, about one-half; in Philosophy and in Mathematics, about one-third; and in Biology, about one-fourth.

The next division of the table, with which Table III should be compared, shows that the percentage of men who were in the School for a second year has varied but slightly from year to year, while

that of men who have been at the School for three or more years has varied a little more. As in the past, a little more than one-half of the students have been in the School but one year; about forty per cent. of these received a Master's degree at the close of the year (sixty-eight Masters of Arts, and four Masters of Science). About one-fourth were in their second year, and the remaining fourth were in their third or in a later year of residence. Many of the First-Year Students had before entering the School pursued graduate studies elsewhere, so that their first year at this University was for them a second or third year of graduate study. Statistics show that the majority of the men who come to the Graduate School intend to remain in it but a single year. This single year should be made for them the best possible year.

TABLE III. — PERCENTAGE OF STUDENTS IN THEIR FIRST AND FOLLOWING YEARS: 1897-1903.

	1897-98.	1898-99.	1899-1900.	1900-01.	1901-02.	1902-03.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
First-year Students . .	51	55	53	54	50	54
Second-year Students .	25	21	25	23	26	26
Third-year Students .	15	13	11	15	12	11
Fourth-year Students and Students of longer residence .	9	11	11	8	11	9

There are striking differences between the membership of the Graduate School and that of the professional schools. In the latter nearly all the students are fresh from college. In the Graduate School, however, only a small proportion are fresh from college; the Graduate Students are ordinarily rather mature young men, who in many instances have already been engaged in teaching or in graduate work elsewhere. Thus, of the First-Year students in 1902-03, only about thirty-two per cent. entered the School immediately after receiving their first degree in Arts or Science (fifty-six); of the same class in 1901-02 the proportion was twenty-six per cent. Fourteen per cent. had been one year out of college, *i. e.*, had received their degrees in 1901 (twenty-three); fifteen per cent. had received their degrees in 1900 (twenty-five); ten per cent. in 1899 (seventeen); while the remainder — about thirty per cent. — had received their first degrees in 1898 or in an earlier year, *i. e.*, four or more years before entering the Graduate School.

[illegible]

* Besides the degrees enumerated above, the following were held by one or two persons as indicated: D.D., Wofford College, S. C.; Litt.M., University of California; Ph.M. (2), Bucknell University, Pa., and the University of Chicago; Heb.B. and Rabbi, Hebrew Union College, O.; Ed.M., Michigan State Normal School; Pd.B. (3), Michigan State Normal School and New York State Normal College; S.D.B., Missouri State Normal School, Warrensburg; B.A.S., Harvard University. There were, further, in the School one graduate each of Andover Theological Seminary, Mass.; Princeton Theological Seminary, N. J.; and Western Theological Seminary, Pa. There were two students from European Universities who had received no academic degree. There was one non-graduate who at Commencement received an A.B. as of the class of 1902; and there were two non-graduates of the Lawrence Scientific School.

The fourth division of Table I shows in general the extent to which the School draws its members from Harvard University as contrasted with other institutions; for detailed information on this point Tables IV and VII may be consulted. About fifty-three per cent. of the members of the School held a degree from Harvard University, and the remaining forty-seven per cent. of course held no Harvard degrees; in 1901-02 these percentages were sixty and forty respectively. (See Table V, and pp. 120 ff.)

Tables IV-VII supplement each other and show in detail the extent to which different parts of the country and the different higher institutions contribute to the membership of the Graduate School. In Table IV are given the various colleges and universities, including professional and technical schools, American and foreign, whose graduates were members of the School in 1902-03, together with the degrees these men held and the number of different men from each institution.

The tables show that men continue to come to the Graduate School from colleges and universities in all parts of the country, and, to a slight extent, from those in Canada and foreign lands. The entire number of institutions thus represented is one hundred and fourteen. Of the one hundred and seventy-five First-Year men thirty-three per cent. came from Harvard; twenty per cent. from other New England colleges; twenty-four per cent. from colleges in the Central States; twelve per cent. from colleges west of the Mississippi; six per cent. from colleges in the Southern States; while only three per cent. came from Canadian institutions. As compared with the previous year, the institutions in Canada and in the Central States alone show a diminished proportion in their representatives in the Graduate School.

The most common degree held by members of the School was that of Bachelor of Arts (two hundred and ninety); next, that of Master of Arts (one hundred and sixty-one).

TABLE V.—PERCENTAGE OF STUDENTS FROM OTHER COLLEGES.

	1896-97.	1897-98.	1898-99.	1899-1900.	1900-01.	1901-02.	1902-03.
Percentage of Students holding no Harvard degree	40	40	41	44	44	40	46
Percentage of Students holding no Harvard first degree in Arts or Sciences	52	55	55	61	62	56	62

TABLE VI. — PERCENTAGE OF BACHELORS' DEGREES OF
DIFFERENT KINDS: 1897-1903.

	1897-98.	1898-99.	1899-1900.	1900-01.	1901-02.	1902-03.
A.B.'s	84	86	84	80	84	83
S.B.'s	9	8	10	11	11	10
Other Bachelors' degrees	7	6	6	9	5	7

There were one hundred and sixty-one Masters of Arts, thirteen Masters of Science, and ten Doctors of Philosophy in the School in 1902-03, as against one hundred and forty-eight Masters of Arts, sixteen Masters of Science, and twelve Doctors of Philosophy in the preceding year.

The list of colleges that send four or more men each to the Graduate School shows slight variation from former years. Leaving Harvard graduates out of consideration, there were in 1896-97 fourteen colleges represented by four or more men; in 1897-98, eighteen; in 1898-99, fifteen; in 1899-1900, twenty-four; in 1900-01, twenty-three; in 1901-02 seventeen; and in 1902-03, twenty.

The colleges and universities that have been steadiest in the supply of Graduate Students for the past five years, each sending four or more each year, are Amherst, Bowdoin, Brown, California, Haverford, Tufts, and Yale. Other colleges that within this period have sent, for four years, four or more men, are Michigan, Northwestern, and Toronto; and for three years, Beloit, Dalhousie, Dartmouth, Kansas, Leland Stanford Jr., Oberlin, and Williams. The increase in the number of men from Chicago and Columbia in the last three years is noteworthy.

Even a cursory examination of the tables shows that a very large proportion of the students have pursued graduate studies before beginning the work of the year. In 1902-03, two-thirds of the members of the School (two hundred and eighteen) had previously carried on such studies, there having been only one hundred and seven that had not. Of this two-thirds, ninety-one students — or a little more than one-quarter of the whole number — had carried on these graduate studies at other universities.

With these "migrants" might very properly be grouped teachers who are in the School on formal leave of absence and expect to return to the positions they have left. The number of such men

These tables (VIII, IX) show that from one-half to two-thirds of the students for the past seven years were born out of New England, and that—until last year—this proportion had been increasing. On the other hand, the proportion of those who claim residence in New England is much larger—more than one-half in 1902–03—and is also increasing. Obviously a considerable number of persons born out of New England have taken up residence in it, though in many cases this may be only a temporary residence. The proportion of students from Canada and the Southern States is less than it used to be.

Of the three hundred and twenty-five students in the School in 1902–03 forty-nine were married men, the wives and families of most of them accompanying them to Cambridge. Of these married men eleven were holders of fellowships or scholarships, including seven Austin Scholars.

DEGREES.

One hundred and sixty-four men were recommended* for the higher degrees of Doctor and Master at Commencement, 1903, being one more than in 1902, and two more than in 1901. This number was exceeded only in 1900—one hundred and seventy—when the School was larger by twenty-eight than in 1902–03. The steady and almost unvarying growth of the number of approved candidates for the higher degrees, in spite of minor fluctuations in the numbers of the students, is an encouraging sign.

The details are found in the following table (X), which gives in the first and second parts the number of students in the Graduate School recommended by the Faculty of Arts and Sciences for any degree, and the number of other students recommended for the degree of Master of Arts, Master of Science, Doctor of Philosophy, and Doctor of Science in the three years, 1901, 1902, 1903. In the third part of the table all persons recommended for the higher degrees are classified with reference to their previous graduation as Bachelors of Arts or of Science.

* The number of persons recommended each year, and that of the men who actually receive the degree, as published in the Annual Catalogue, do not always agree. Usually a few of the candidates recommended do not receive the degree at once. The degree is in these cases ordinarily conferred in a later year, "as of" the year in which the recommendation was made.

TABLE X.—RECOMMENDATIONS FOR DEGREES IN 1901-03.

	1901.	1902.	1903.
I. Graduate Students recommended for A.B. . .	13	11	10
Graduate Students recommended for A.M. . .	92	94	97
Graduate Students recommended for S.M. . .	9	8	6
Graduate Students recommended for Ph.D. . .	29	28	28
Graduate Students recommended for S.D. . .	0 143	3 144	1 142
II. College Seniors recommended for A.M. . . .	1	1	1
College Seniors of a preceding year, recommended for A.M. on work done in Senior year	23	19	24
College Juniors of a preceding year, recommended for A.M. on work done in Junior year	0	0	1
L.S.S. fourth-year men of a preceding year, recommended for S.M. on work done in L.S.S. fourth-year	0	0	1
Professional students recommended for A.M. on special courses of study	8	10	5
Professional students recommended for Ph.D. on special courses of study	0 32	0 30	0 32
Total of the above list	175	174	174
Deduct Graduate Students recommended for A.B.	13	11	10
Total number recommended for A.M., S.M., Ph.D., and S.D.	162	163	164
III. Harvard Bachelors of Arts or Science, not previously graduated elsewhere	59	58	68
Harvard Bachelors of Arts or Science, previously graduated elsewhere	20	31	12
Students not Harvard Bachelors of Arts or Science	83 162	74 163	84 164

Several comments on this table suggest themselves. About eighteen per cent. of holders of the higher degrees had never been registered in the Graduate School; these were men who had completed their work as undergraduates (twenty-five Seniors, one Junior, one Lawrence Scientific School Senior) or as members of a professional school (five), their programmes of study for the degree of Master of Arts or Master of Science having been previously approved by the Administrative Board.

The gradual increase in the proportion of non-Harvard men who are coming up for the higher degrees, which was checked in 1902, was continued in 1903. The proportions for the last five years of men recommended for the higher degrees, who held no first degree from Harvard, are these: in 1899, about forty-four per cent.; in 1900, about fifty per cent.; in 1901, about fifty-one

per cent.; in 1902, about forty-five per cent.; in 1903, about fifty-one per cent.

One hundred and twenty-eight Masters of Arts were recommended in course, a number previously exceeded only in 1900 when there were four more.

The gradual decline in the number of Graduate Students recommended for the degree of A.B. matches the decline in the number of men who, having obtained a first degree elsewhere, desire to obtain it again at Harvard (in the Graduate School). These phenomena aided the Faculty in reaching the decision to abolish, after 1904, the custom of conferring the degree of Bachelor of Arts on Graduate Students.

TABLE XI. — DIVISIONS AND DEPARTMENTS IN WHICH RECOMMENDATIONS FOR THE HIGHER DEGREES WERE MADE IN 1903.

DIVISION.	DEPARTMENT.	DEGREES.			
		A.M.	S.M.	PH.D.	S.D.
I. Semitic Languages and History
II. Ancient Languages :					
Indic Philology		1	..	..	..
The Classics (Greek, Latin)		13	..	5	..
Total in Ancient Languages		— 14	— ..	— 5	— ..
III. Modern Languages :					
English		19	..	4	..
Germanic Languages and Literatures		4	..	1	..
French, and other Romance Languages and Literatures		7	..	..	..
In more than one Department		2	..	..	..
Total in Modern Languages		— 32	— ..	— 5	— ..
IV. History and Political Science :					
History and Government		12	..	2	..
Political Economy		14	..	..	..
Total in Hist. and Political Sci.		— 26	— ..	— 2	— ..
V. Philosophy		16	..	6	..
[Education		5]			
VI. The Fine Arts :					
History and Principles of the Fine Arts
Architecture		2	2	..	..
Total in the Fine Arts		— 2	— 2	— ..	— ..
VII. Music
VIII. Mathematics		6	..	1	..
IX. Engineering		1	..	..	..
X. Physics		6	1	1	..
XI. Chemistry		8	..	4	..

DIVISION.	DEPARTMENT.	DEGREES.			
		A.M.	S.M.	PH.D.	S.D.
XII. Biology :					
	Botany	1	..	..	..
	Zoology	3	..	1	..
	Total in Biology	— 4	— ..	— 1	— ..
XIII. Geology :					
	Geology and Geography	2	2	2	..
	Mineralogy and Petrography . . . . .	..	..	..	..
	Mining and Metallurgy	2	2	..	..
	Total in Geology	— 4	— 4	— 2	— ..
XIV. Anthropology					
	In more than one Division	4	..	1	1
Professional Students :					
	Divinity School	4	..	..	..
	Law School . . . . .	..	..	..	..
	Medical School	1	..	..	..
	Total	128	7	28	1

In the next table (XI) the Departments or fields of study are indicated in which lay the chief work for the Masters' and Doctors' degrees.

Six of the fourteen Divisions were represented by ten or more candidates. These were: Modern Languages, with thirty-seven (including five Doctors); History and Political Science, with twenty-eight (including two Doctors); Philosophy, with twenty-two (including six Doctors); Ancient Languages, with nineteen (including five Doctors); Chemistry, with twelve (including four Doctors); and Geology, with ten (including two Doctors).

The degree of Doctor was conferred on the twenty-nine men named below, of whom one was made a Doctor of Science and the others Doctors of Philosophy. With each name is indicated the special field in which the degree was taken, the candidate's academic history, the subject of his thesis, and his present occupation.

The Doctors of Philosophy were: —

Philology.

ANDREW RUNNI ANDERSON.
Classical Philology. — A.B. (*Univ. of Wisconsin*) 1900. — Res. Gr. Stud., 1901-03.
Thesis: "De Plauti Diphthongi ei Usu Questiones."
Now studying Classical Philology at Berlin, as Harris Fellow.

FLOYD GEORGE BALLENTINE.
Classical Philology. — A.B. (*Bucknell Univ., Pa.*) 1899, A.B. (*Harvard Univ.*) 1900, A.M. (*ibid.*) 1901. — Res. Gr. Stud., 1900-03.
Thesis: "De Nympharum Cultu Quaestiones Selectae."
Instructor in Latin, Bucknell University.

CARLETON FAIRCHILD BROWN.
English Philology. — A.B. (*Carleton Coll., Minn.*) 1888, Gr., *Andover Theol. Seminary*, 1893, A.M. (*Harvard Univ.*) 1901. — Res. Gr. Stud., 1900-03.
Thesis: "A Study of the English Grammar Schools before the Reformation."
Instructor in English in this University.

EARNEST CARY.
Classical Philology. — A.B. (*Gates Coll., Neb.*) 1898, A.B. *magna cum laude* (*Harvard Univ.*) 1900, A.M. (*ibid.*) 1901. — Res. Gr. Stud., 1900-03.
Thesis: "De Aristophanis Avium apud Suidam Reliquiis."
Now studying Classical Philology at Berlin, as Parker Fellow.

WALTER MORRIS HART.

English Philology. — A.B. (*Haverford Coll., Pa.*) 1892, A.M. (*ibid.*) 1893, A.M. (*Harvard Univ.*) 1901. — Res. Gr. Stud., 1900-03.
 Thesis: "Ballad and Epic: A Study in the Development of the Narrative Art."
 Instructor in English, University of California.

WILLIAM WITHERLE LAWRENCE.

English Philology. — A.B. (*Bowdoin Coll., Me.*) 1898, A.M. (*Harvard Univ.*) 1900. — Res. Gr. Stud., 1899-1903.
 Thesis: "Repetition in Anglo-Saxon Poetry, and its Relation to the Critical Reconstruction of *Béowulf*."
 Associate Professor of English Literature, University of Kansas.

EDWIN MOORE RANKIN.

Classical Philology. — A.B. (*Vanderbilt Univ., Tenn.*) 1896, A.M. (*ibid.*) 1897, A.M. (*Harvard Univ.*) 1898. — Res. Gr. Stud., 1897-98 and 1901-03.
 Thesis: "Quas Partes ei qui *Μάγιστοι* vocantur in Vita Cotidianas Graecorum egerint quaseritur."
 Instructor in Latin, Princeton University.

JOHN STRONG PERRY TATLOCK.

English Philology. — A.B. *magna cum laude* 1896, A.M. 1897. — Res. Gr. Stud., 1896-97 and 1901-03.
 Thesis: "Essays at the Chronology of Chaucer's Poems."
 Instructor in English, University of Michigan.

OLIVER SAMUEL TONKS.

Classical Archaeology. — A.B. *cum laude* 1898, A.M. 1899. — Res. Gr. Stud., 1898-1901; Non-Res. Stud., 1901-02.
 Thesis: "Brygos."
 Instructor in Greek, University of Vermont.

ROBERT MAXIMILIAN OTTOMAR WERNER.

Germanic Philology. — LL.B. (*Albany Law School, N.Y.*) 1887, A.B. (*Harvard Univ.*) 1899, A.M. (*ibid.*) 1900. — Res. Gr. Stud., 1898-1903.
 Thesis: "The Importance of the Symbol in the Aesthetic Consciousness of Wackenroder, Tieck, Friedrich Schlegel, and Novalis: A Study in the History of Aesthetic Thought."
 Continuing his studies in Germany.

Philosophy.**ROSSELL PARKER ANGIER.**

Psychology. — A.B. *magna cum laude* 1897, A.M. 1901. — Res. Gr. Stud., 1898-99 and 1900-03.
 Thesis: "The Aesthetics of Unequal Division."
 Continuing his studies in Berlin.

CHARLES THEODORE BURNETT.

Psychology. — A.B. (*Amherst Coll.*) 1896, A.M. (*Harvard Univ.*) 1900. — Res. Gr. Stud., 1898-1903.
 Thesis: "Influences on the Judgment of Number."
 Now continuing his studies at this University.

GEORGE ROWLAND DODSON.

Ethics and History of Philosophy. — A.B. (*Univ. of the State of Missouri*) 1887, A.M. (*Harvard Univ.*) 1902. — Res. Gr. Stud., 1901-03.
 Thesis: "The Idea of the Good in Plato."
 In the Unitarian ministry, with a pastorate at St. Louis, Mo.

KNIGHT DUNLAP.

Psychology. — PH.B. (*Univ. of California*) 1899, Litt.M. (*ibid.*) 1900, A.M. (*Harvard Univ.*) 1901. — Res. Gr. Stud., 1900-02.
 Thesis: "Tactical Time: An Experimental Investigation."
 Assistant in the Psychological Laboratory of the University of California.

DAVID CAMP ROGERS.

Psychology. — A.B. (*Princeton Univ., N.J.*) 1899, A.M. (*Harvard Univ.*) 1902. — Res. Gr. Stud., 1901-03.
 Thesis: "Coördinations in Space Perceptions."
 Assistant in Philosophy at this University.

MARLOW ALEXANDER SHAW.

Psychology. — A.B. (*Univ. of Toronto*) 1896. — Res. Gr. Stud., 1901-03.
 Thesis: "Illusions of a Kinaesthetic Character."
 At present in Toronto.

History.**GEORGE HUBBARD BLAKESLEE.**

American History. — A.B. (*Wesleyan Univ., Conn.*) 1893, A.M. (*ibid.*) 1897, A.M. (*Harvard Univ.*) 1900. — Res. Gr. Stud., 1898-1901; Non-Res. Stud., 1901-02.
 Thesis: "The History of the Antimasonic Party."
 Instructor in History, Clark University.

AUGUSTUS HUNT SHEARER.

American History. — A.B. (*Rutgers Coll., N.J.*) 1899, A.B. (*Harvard Univ.*) 1900, A.M. (*ibid.*) 1901. — Res. Gr. Stud., 1899-1903.
 Thesis: "The History of Political Parties in Pennsylvania, 1776-1790."
 At present in Boulder, Colo.

Mathematics.**DAVID RAYMOND CURTISS.**

Analysis. — A.B. (*Univ. of California*) 1899, A.M. (*ibid.*) 1901. — Res. Gr. Stud., 1901-03.
 Thesis: "Binary Families in a triply Connected Region, with especial Reference to Hypergeometric Families."
 Now studying Mathematics at Paris, as Parker Fellow.

Physics.**THOMAS CALVIN MCKAY.**

Electricity. — A.B. (*Dalhousie Univ., N.S.*) 1893, A.M. (*ibid.*) 1898, A.M. (*Harvard Univ.*) 1899. — Res. Gr. Stud., 1898-1903.
 Thesis: "On the Relation of the Hall Effect to the Current Density in Gold."
 Assistant in Physics at this University.

Chemistry.

FREDERIC BONNET, JR.

Physical Chemistry. — S.B. (*Washington Univ., Mo.*) 1899, S.M. (*Harvard Univ.*) 1902. — Res. Gr. Stud., 1899-1903.
 Thesis: I. "The Changing Hydrolytic Equilibrium of Chromic Sulphate." II. "The Compressibility of Metals."
 Instructor in Chemistry, State University of Iowa.

KENNETH LAMARTINE MARK.

Physical Chemistry. — A.B. 1899, A.M. 1900. — Res. Gr. Stud., 1899-1903.
 Thesis: "The Expansion of Gases by Heat under Constant Pressure."
 Instructor in Chemistry, Simmons College.

HORACE CHAMBERLAIN PORTER.

Organic Chemistry. — A.B. (*Univ. of Illinois*) 1897, S.B. (*ibid.*) 1899, S.M. (*ibid.*) 1900, A.M. (*Harvard Univ.*) 1901. — Res. Gr. Stud., 1900-03.
 Thesis: "Derivatives of Tetrabromorthobenzoquinone."
 Chemist, Solvay Alkali Works, Syracuse, N.Y.

WILFRED NEWSOME STULL.

Physical Chemistry. — S.B. (*State Univ. of Iowa*) 1898, S.M. (*ibid.*) 1899. — Res. Gr. Stud., 1901-03.
 Thesis: I. "The Association of Energy with Matter." II. "The Speed and Nature of the Reaction of Bromine on Oxalic Acid."
 Chemist, Mallinckrodt Chemical Works, St. Louis.

Biology.

AMOS WILLIAM PETERS.

Zoölogy. — Litt.B. (*Adelbert Coll. of Western Reserve Univ., O.*) 1897, A.M. (*Harvard Univ.*) 1901. — Res. Gr. Stud., 1900-03.
 Thesis: "Metabolism and the Reaction of Division in Protozoa."
 Instructor in Zoölogy, University of Illinois.

Geology.

LAURENCE LAFORGE.

General Geology. — A.B. 1899, A.M. 1900. — Res. Gr. Stud., 1899-1900 and last third of 1900-01.
 Thesis: "The Geology of Somerville, Massachusetts."
 In the United States Geological Survey.

THOMAS WAYLAND VAUGHAN.

Palaeontology. — S.B. (*Tulane Univ., La.*) 1899, A.B. (*Harvard Univ.*) 1893, A.M. (*ibid.*) 1894. — Res. Gr. Stud., 1893-95; Non-Res. Stud., 1898-99.
 Thesis: "The Eocene and Lower Oligocene Coral Faunas of the United States, with Descriptions of a few doubtfully Cretaceous Species."
 In the United States Geological Survey.

Anthropology.

WILLIAM CURTIS FARABEE.

Somatology. — A.B. (*Waynesburg Coll., Pa.*) 1894, A.M. (*ibid.*) 1895, A.M. (*Harvard Univ.*) 1900. — Res. Gr. Stud., 1899-1902.
 Thesis: "Hereditary and Sexual Influences in Meristic Variation: A Study of Digital Malformations in Man."
 Instructor in Anthropology at this University.

The Doctor of Science was: —

Anthropology.

GEORGE BYRON GORDON.

American Archaeology and General Ethnology. — S.B. *cum laude* 1902. — Res. Gr. Stud., 1902-03.
 Thesis: "The Serpent Motive in the Ancient Art of Mexico and Central America."
 Assistant Curator of the Department of Ethnology, and Curator of the Division of American Archaeology, Free Museum of Science and Art, University of Pennsylvania.

Of these twenty-nine Doctors, twenty-one are known to be now engaged each in the actual pursuit of his profession. Fifteen are teachers in colleges or universities, one being a professor, eleven instructors, and three assistants. Four are in the service of this University, two as instructors and two as assistants. None are connected with secondary schools. Two are in the United States Geological Survey, two are industrial chemists, one is a museum assistant, and one is in the ministry. Six of the remaining Doctors are continuing their studies, one in Cambridge, and five in Europe, of whom three hold travelling fellowships.

As the degree of Doctor of Philosophy is based on the degree of Bachelor of Arts or its equivalent, or on the degree of Master of Arts, all the Doctors of Philosophy — save two — held degrees in Arts. All but four held Harvard degrees, and of these four all — save one — held degrees in Arts. Twenty-three were Harvard

Masters of Arts; of these, eleven were also Harvard Bachelors of Arts, while ten of them were Bachelors of Arts elsewhere only; the two remaining were Bachelors of Philosophy and of Letters respectively. One was a Harvard Master of Science and Bachelor of Science elsewhere. Of the remaining four of the twenty-eight, three were Bachelors of Arts elsewhere, and one was Bachelor and Master of Science elsewhere.

In the case of fourteen candidates, six or more years had elapsed since the candidate had received his first degree in Arts or Science. Of the remaining fourteen, three had been out of College for five years, seven for four years, and four for three years.

Though the candidate for the degree of Doctor of Science received his degree only one year after the date of his Bachelor's degree, he had pursued approved studies for more than four years previously.

The period of resident study of the Doctors of Philosophy varied between one year (one candidate) and five years (two candidates). Seven candidates were two years in residence; eleven three years, and seven again four years. The Division in which the degree was conferred after one year of resident study was Geology (one candidate, who had, however, done non-resident work in the field for more than a year). The Divisions or Departments in which the degree was conferred after two years of resident study were Philosophy, with four candidates, and Classics, Mathematics, and Chemistry, each with one candidate. The Departments where three years were found necessary by some of their candidates were Classics, with three men; English, with three; and History, Chemistry, Biology, Geology, and Anthropology, each with one man. The candidates who devoted four years to resident study were one each in the Departments of Classics, English, Germanic Philology, History, and Philosophy, and two in Chemistry. The two men who were registered for five years of resident study were students of Philosophy and Physics, respectively.

The average period of resident study for these candidates, as for those in 1901-02, is a little above three years. If we add to this the time devoted to graduate study by many of these candidates at other universities, the average period of time given to preparation for the Doctor's degree will be more than three years of graduate study.

The period of professional study for the degree of Doctor of Philosophy is fixing itself, at this University, at three years, with a tendency to exceed this length of time.

TABLE XII. — AGE OF GRADUATE STUDENTS RECOMMENDED FOR THE DEGREES OF MASTER OF ARTS, MASTER OF SCIENCE, AND DOCTOR OF PHILOSOPHY: 1903.*

	19	20	21	22	23	24	25	26	27	28-34	35-39	40 or over	Total.
A.M.'s .	1	1	2	8	16	5	17	5	4	27	3	5	94
S.M.'s .	..	..	..	..	1	1	1	1	..	1	..	..	5
Ph.D.'s .	..	..	..	..	..	2	4	3	3	11	5	..	28

TABLE XIII. — AGE OF GRADUATE STUDENTS RECOMMENDED FOR THE DEGREE OF DOCTOR OF PHILOSOPHY: 1897-1903.

	22	23	24	25	26	27	28 or over	Average age of men 27 or under.	Percentage of men 28 or older.
1897 . . . . .	..	..	3	1	4	2	15	25.5	60
1898	1	..	1	4	2	2	15	25.2	60
1899	1	4	2	3	2	1	8	24.3	38
1900 . . . . .	..	2	3	4	2	6	18	25.4	51
1901 . . . . .	..	..	1	3	5	3	17	25.8	59
1902 . . . . .	..	1	2	3	4	2	16	25.3	57
1903 . . . . .	..	..	2	4	3	3	16	25.6	58

Table XII gives the age of Graduate Students recommended for the higher degrees at Commencement, 1903, and Table XIII that of Doctors of Philosophy for the seven years since 1897. The average age for the normal Master of Arts—that is, a student who has continued his studies immediately after receiving his Bachelor's degree or after an interval of not more than a year—is about twenty-four. The large group of older persons is made up of college-bred men who have come to the University for a year or more of study, after having been for several years engaged in active pursuits.

The “normal” Doctors are of course older, but not much older, as a glance at the statement of the average age of the Doctors from 1897 to 1903, given in Table XIII, will show. This is a little above twenty-five. The very large proportion of men who are not “normal” Doctors—men of twenty-eight or over—is surprising, averaging for seven years more than fifty-five per cent. These again belong to the same class as the older Masters of Arts. For various reasons, often financial, these men have had to postpone the

* Men recommended for “as of” degrees are not included.

attainment of their degree to an age when men in other professions have already become well established. If the University could forestall such postponement it would do such men a great service.

FELLOWSHIPS AND SCHOLARSHIPS.

The appointments to fellowships and scholarships for 1902-03 were made toward the close of the preceding academic year, chiefly in June, 1902; similarly the appointments for the subsequent year, 1903-04, were for the most part made within the academic year covered by the present report. The recommendations to fellowships and scholarships are made by the Faculty of Arts and Sciences on the nomination of its Committee on Fellowships and other Aids for Graduate Students,* and thus are a part of the business of that Faculty; but as the students appointed are members of the Graduate School, information on this subject is always given in the reports of the Dean of this School.

Twenty-nine fellowships and fifty scholarships were held by students in the Graduate School in 1902-03. With these fellowships are included the John Harvard Fellowships, without stipend, — five in 1902-03. Fifteen of the fellowships, including three of the John Harvard Fellowships, were held by Non-Resident Students who, with two exceptions, studied abroad, — in England (three), in Germany (five), and in Holland, France, Italy, Greece, and India (one in each country). Thirteen of the fellowships and all the scholarships were held by Resident Students.

For 1903-04 appointments have been made to thirty-three fellowships and to sixty scholarships.

The names of the holders of fellowships for the two academic years 1902-03 and 1903-04 follow. The fellowships are arranged in the order of their foundation.

1902-03.

Harris Fellowship (1868).

WILLIAM JAY HALE.

A.B. (*Miami Univ., O.*) 1897, A.M. (*ibid.*) 1897, A.B. (*Harvard Univ.*) 1898, A.M. (*ibid.*) 1899, PH.D. (Chemistry) 1902. — Res. Gr. Stud., 1898-1902; Non-Res. Stud., 1902-03. — University Scholar, 1898-99; Thayer Scholar, 1899-1900. — Assistant in Chemistry, 1900-01; Austin Teaching Fellow in Chemistry, 1901-02. — Student of Chemistry, at Berlin. Research Assistant to Professor Stieglitz, University of Chicago.

1903-04.

ANDREW RUNNI ANDERSON.

A.B. (*Univ. of Wisconsin*) 1900, PH.D. (Classical Philology) 1903. — Res. Gr. Stud., 1901-03. — Thayer Scholar, 1901-02; Shattuck Scholar, 1902-03. Student of Classical Philology at Berlin.

* This Committee (in 1902-03) consisted of Professor J. H. Wright, *Chairman*, Professors Palmer, Davis, Mark, Gross, Kittredge, Richards, Sabine, and Andrew.

1902-03.

Rogers Fellowships (1869).

HAROLD DE WOLF FULLER.

A.B. (*Adelbert Coll. of Western Reserve Univ., O.*) 1897, A.M. (*Harvard Univ.*) 1898, A.M. (*ibid.*) 1900, PH.D. (English Philology) 1902. — Res. Gr. Stud., 1897-Feb. 1899, and Feb. 1900-02; Non-Res. Stud., 1902-03. — University Scholar, 1900-01; Christopher M. Weld Scholar, 1901-02. — Student of English Philology and Comparative Literature, at Leyden. Continuing his studies at Leyden, as Rogers Fellow.

ROLAND GREENE USHER.

A.B. 1901, A.M. 1902. — Res. Gr. Stud., 1901-02; Non-Res. Stud., 1902-03. — Ricardo Prize Scholar, 1901-02. — Student of History, at Oxford and Cambridge, England. Continuing his studies in England, as Rogers Fellow.

HAROLD DE WOLF FULLER.

Reappointed.

ROLAND GREENE USHER.

Reappointed.

Parker Fellowships (1873).

JOHN WILLIAM BRADSHAW.

A.B. (*Univ. of Michigan*) 1900, A.M. (*Harvard Univ.*) 1902. — Res. Gr. Stud., 1900-02. — Non-Res. Stud., 1902-03. — Leverett Saltonstall Scholar, 1901-02. — Student of Mathematics, at Strasburg. Continuing his studies at Strasburg, as John Thornton Kirkland Fellow.

DONALD CAMERON.

A.B. (*Univ. of Texas*) 1896, A.M. (*ibid.*) 1896, A.M. (*Harvard Univ.*) 1900, PH.D. (Classical Philology) 1902. — Res. Gr. Stud., 1896-1902; Non-Res. Stud., 1902-03. — Townsend Scholar, 1900-01; Edward Austin Fellow, 1901-02. — Student of Classical Philology, at Berlin. Instructor in Greek, at the University of Texas.

CHARLES WILLIAM PRENTISS.

Reappointed.

A.B. (*Middlebury Coll., Vt.*) 1896, A.M. (*ibid.*) 1897, A.M. (*Harvard Univ.*) 1898, PH.D. (Biology) 1900. — Res. Gr. Stud., 1897-1900; Non-Res. Stud., 1901-03. — Townsend Scholar, 1897-98. — Assistant in Zoölogy, 1898-1900; Instructor in Anatomy, Harvard Veterinary School, 1900-01. — Student of Zoölogy, at Strasburg. Instructor in Biology, Adelbert College of Western Reserve University.

WILLIAM FREDERICK BOOS.

A.B. 1894, PH.D. (*Univ. of Heidelberg, Germany*) 1896, M.D. (*Harvard Univ.*) 1901. Student of Chemistry, at Strasburg.

EARNEST CARY.

(See Edward Austin Fellowships, 1902-03.)

DAVID RAYMOND CURTISS.

A.B. (*Univ. of California*) 1899, A.M. (*ibid.*) 1901, PH.D. (Mathematics) 1903. — Res. Gr. Stud., 1901-03. — Shattuck Scholar, 1901-02; Christopher M. Weld Scholar, 1902-03. Student of Mathematics, at Paris.

John Thornton Kirkland Fellowship (1873).

JOHN TAGGART CLARK.

A.B. 1896, A.M. 1899, PH.D. (Romance Philology) 1901. — Res. Gr. Stud., 1896-1901; Non-Res. Stud., 1901-03. — University Scholar, 1898-99; Townsend Scholar, 1899-1900; Shattuck Scholar, 1900-01; Rogers Fellow, 1901-02. — Student of Romance Languages, at Paris. Continuing his studies in Paris.

JOHN WILLIAM BRADSHAW.

(See Parker Fellowships, 1902-03.)

James Walker Fellowship (1881).

WILLIAM ERNEST HOCKING.

A.B. 1901, A.M. 1902. — Res. Gr. Stud., 1901-02; Non-Res. Stud., 1902-03. — Henry Bromfield Rogers Memorial Fellow, 1901-02. — Student of Philosophy, at Göttingen. Now continuing his studies at this University, as Townsend Scholar.

RAY MADDING MCCONNELL.

A.B. (*Southern Univ., Ala.*) 1899, S.T.B. (*Vanderbilt Univ., Tenn.*) 1901, A.M. (*Harvard Univ.*) 1902. — Gr. Div. Stud., 1901-03. Student of Philosophy, at Berlin.

1902-03.

1903-04.

John Tyndall Scholarship (1885).

EDWIN PLIMPTON ADAMS.

Reappointed.

A.B. (*Beloit Coll., Wis.*) 1899, S.M. (*Harvard Univ.*) 1901. — Res. Gr. Stud., 1899-1901; Non-Res. Stud., 1901-02. — Student of Physics, at Cambridge, England.
Now continuing his studies at Cambridge, England.

JOHN L. HOGG.

(See Whiting Fellowships, 1902-03.)

Robert Treat Paine Fellowship (1887).

FRANCIS REEVE COPE, JR.

A.B. (*Haverford Coll., Pa.*) 1900, A.B. (*Harvard Univ.*) 1901, A.M. (*ibid.*) 1902. — Res. Gr. Stud., 1901-02; Non-Res. Stud., 1902-03. — Student of Social Science, at New York.

Continuing his studies in Europe, as John Harvard Fellow.

EDWIN DETURCK BECHTEL.

A.B. 1903.

Student of Social Science, at this University.

FRANK HAROLD LEMONT.

A.B. 1903.

Student of Social Science, at this University.

Henry Lee Memorial Fellowship (1889).

LEON CARROLL MARSHALL.

A.B. (*Ohio Wesleyan Univ.*) 1900, A.B. (*Harvard Univ.*) 1901, A.M. (*ibid.*) 1902. — Res. Gr. Stud., 1901-03. — Assistant in History, 1901-02. — Student of Political Economy, at this University.

Assistant Professor of Economics, Ohio Wesleyan University.

GEORGE RANDALL LEWIS.

A.B. 1902. — Res. Gr. Stud., 1902-03. — University Scholar, 1902-03.

Student of Political Economy, at this University.

Ozias Goodwin Memorial Fellowship (1889).

EMERSON DAVID FITE.

A.B. (*Yale Univ.*) 1897. — Res. Gr. Stud., 1901-03. — Townsend Scholar, 1901-02. — Student of History, at this University.

Continuing his studies at this University, as Edward Austin Fellow.

WALTER HAROLD CLAPLIN.

A.B. 1902, A.M. 1903. — Res. Gr. Stud., 1902-03. — Thayer Scholar, 1902-03.

Student of History, at this University.

Henry Bromfield Rogers Memorial Fellowship (1889).

RUFUS EDWARD MILES.

A.B. (*Amherst Coll.*) 1899, A.M. (*ibid.*) 1903. — Res. Gr. Stud., 1899-1900 and 1902-03. — Student of Philosophy, at this University.
Engaged in sociological studies in Boston.

CARLETON AMES WHEELER.

A.B. 1899.

Student of Philosophy, at this University.

Hemenway Fellowship (1891).

GEORGE BYRON GORDON.

S.B. 1902, S.D. 1903. — Res. Gr. Stud., 1902-03. — Student of Anthropology, at this University.

Assistant Curator of the Department of Ethnology, and Curator of the Division of American Archaeology, Free Museum of Science and Art, University of Pennsylvania.

(Not yet filled for 1903-04.)

John Harvard Fellowships (1895).

APTHORP GOULD FULLER.

A.B. 1900, A.M. 1902. — Res. Gr. Stud., 1900-02. — Student of Philosophy, at Oxford.
Continuing his studies at Oxford.

JAMES MACKINTOSH BELL.

A.M. (*Queen's Univ., Ont.*) 1899. — Res. Gr. Stud., 1902-03.

Student of Geology, at this University.

1902-03.

HARRY NELSON GAY.

Reappointed a second time.

A.B. (*Amherst Coll.*) 1891, A.M. (*Harvard Univ.*) 1896.—Res. Gr. Stud., 1894-96 and 1896-97; Non-Res. Stud., 1895-96 and 1900-03.—Student of History, at Rome.

Continuing his studies at Rome, as Curator of Italian History of the Harvard University Library.

WILLIAM HENRY PAINE HATCH.

A.B. 1898, A.M. 1899, S.T.B. (*Episcopal Theol. School, Cambridge*) 1902.—Res. Gr. Stud., 1898-1903.—Student of Classical Philology, at this University.

At his home, South Hartford, N.Y.

MORTIMER PHILLIPS MASON.

A.B. 1899, A.M. 1900.—Res. Gr. Stud., 1902-03.—Student of Philosophy, at this University.

Continuing his studies at this University.

FRANCIS SAMUEL PHILBRICK.

A.B. (*Univ. of Nebraska*) 1897, A.M. (*ibid.*) 1899, PH.D. (History) 1902.—Res. Gr. Stud., 1899-1902; Non-Res. Stud., 1902-03.—University Scholar, 1899-1900; Morgan Fellow, 1900-01; Edward Austin Fellow, 1901-02.—Student of History, in Europe. Engaged in research work in England.

1903-04.

HOWARD LANE BLACKWELL.

A.B. 1899, A.M. 1900.—Res. Gr. Stud., 1899-1900 and 1901-03.

Student of Physics, at this University.

FRANCIS REEVE COPE, JR.

(See Robert Treat Paine Fellowship, 1902-03.)

LOUIS WILLIAM FLACCUS.

A.B. (*Washington and Jefferson Coll., Pa.*) 1900, A.M. (*Harvard Univ.*) 1902.—Res. Gr. Stud., 1901-03.

Student of Philosophy, at this University.

CONYERS READ.

A.B. 1903.

Student of History, at Oxford.

WILLIAM HENRY ROEVER.

S.B. (*Washington Univ., Mo.*) 1897.—Res. Gr. Stud., 1897-98 and 1901-02.—Shattuck Scholar, 1897-98.—Instructor in Mathematics, 1902-03.

Student of Mathematics, at this University.

GEORGE WALLACE UMPHREY.

A.B. (*Univ. of Toronto, Ont.*) 1899, A.M. (*Harvard Univ.*) 1901.—Res. Gr. Stud., 1900-01.

Student of Romance Languages at Paris, and Fellow of the Ministry of Public Instruction of the French Republic.

Whiting Fellowships (1895).

HARVEY NATHANIEL DAVIS.

A.B. (*Brown Univ., R.I.*) 1901, A.M. (*ibid.*) 1902, A.M. (*Harvard Univ.*) 1903.—Res. Gr. Stud., 1902-03.—Student of Physics, at this University.

Continuing his studies at this University, as Whiting Fellow.

JOHN L. HOGG.

A.B. (*Univ. of Toronto, Ont.*) 1899, A.M. (*Harvard Univ.*) 1902.—Res. Gr. Stud., 1901-03.—University Scholar, 1901-02.—Student of Physics, at this University.

Continuing his studies at this University, as John Tyndall Scholar.

JOSEPH CLEAVELAND PEARSON.

Reappointed.

A.B. (*Bowdoin Coll., Me.*) 1900, A.M. (*Harvard Univ.*) 1903.—Res. Gr. Stud., 1901-02.—Student of Physics, at this University. Instructor in Physics, Bowdoin College.

JOHN MEAD ADAMS.

A.B. 1903.

Student of Physics, at this University.

HARVEY NATHANIEL DAVIS.

Reappointed.

ALPHEUS WILSON SMITH.

A.B. (*West Virginia Univ.*) 1900, A.M. (*Harvard Univ.*) 1903.—Res. Gr. Stud., 1902-03.

Student of Physics, at this University.

South End House Fellowship (1900).

ALBERT BENEDICT WOLFE.

A.B. 1902, A.M. 1903.—Res. Gr. Stud., 1902-03.—Student of Sociology, at this University.

Continuing his studies at this University, as South End House Fellow.

ALBERT BENEDICT WOLFE.

Reappointed.

1902-03.

1903-04.

Charles Eliot Norton Fellowship (1900).

HAROLD RIPLEY HASTINGS.

A.B. (*Dartmouth Coll., N.H.*) 1900, A.M. (*Harvard Univ.*) 1902. — Res. Gr. Stud., 1901-02; Non-Res. Stud., 1902-03. — Student of Classical Archaeology, in Athens. Continuing his studies at Athens, as holder of a fellowship of the Archaeological Institute of America.

FRITZ SAGE DARROW.

A.B. 1902.
Student of Classical Archaeology in Athens.

Edward Austin Fellowships (1900).

EARNEST CARY.

A.B. (*Gates Coll., Neb.*) 1898, A.B. (*Harvard Univ.*) 1900, A.M. (*ibid.*) 1901, Ph.D. (Classical Philology) 1903. — Res. Gr. Stud., 1900-03. — Thayer Scholar, 1900-01; Shattuck Scholar, 1901-02. — Student of Classical Philology, at this University. Continuing his studies at Berlin, as Parker Fellow.

LEON JACOB COLE.

A.B. (*Univ. of Michigan*) 1901. — Res. Gr. Stud., 1902-03. — Student of Zoölogy, at this University. Austin Teaching Fellow in Zoölogy and second-year Graduate Student in this University.

ROBERT BELL MICHELL.

A.B. (*Univ. of Toronto, Ont.*) 1900, A.M. (*Harvard Univ.*) 1901. — Res. Gr. Stud., 1900-03. — Townsend Scholar, 1901-02. — Student of Romance Philology, at this University. Instructor in Romance Languages, at this University.

WILFRED NEWSOME STULL.

S.B. (*State Univ. of Iowa*) 1898, S.M. (*ibid.*) 1899, Ph.D. (Chemistry) 1903. — Res. Gr. Stud., 1901-03. — George and Martha Derby Scholar, 1901-02. — Student of Chemistry, at this University. Chemist, Mallinckrodt Chemical Works, St. Louis.

FREDERIC WALTON CARPENTER.

S.B. (*New York Univ.*) 1899, A.M. (*Harvard Univ.*) 1902. — Res. Gr. Stud., 1900-03. — Virginia Barret Gibbs Scholar, 1900-01. — Assistant in Zoölogy, 1901-03. Student of Zoölogy, at this University.

EMERSON DAVID FITE.

(See Ozias Goodwin Memorial Fellowship, 1902-03.)

CHESTER NOYES GREENOUGH.

A.B. 1898, A.M. 1899. — Res. Gr. Stud., 1898-99 and 1902-03. — Shattuck Scholar, 1902-03. — Instructor in English, 1901-02. Student of English, at this University.

ARTHUR BECKET LAMB.

A.B. (*Tufts Coll.*) 1900, A.M. (*ibid.*) 1900, A.M. (*Harvard Univ.*) 1903. — Res. Gr. Stud., 1902-03. Student of Chemistry, at this University.

Travelling Fellowship in Indic Philology (1902).

DAVID BRAINERD SPOONER.

A.B. (*Leland Stanford Jr. Univ., Cal.*) 1899. — Non-Resident Stud., 1902-03. — Student of Indic Philology, at Benares. Continuing his studies at Benares, as Travelling Fellow in Indic Philology.

DAVID BRAINERD SPOONER.

Reappointed.

Nelson Robinson Jr. Fellowship (1902).

LEROY PEARL BURNHAM.

S.B. 1902, S.M. 1903. — Res. Gr. Stud., 1902-03. — Austin Scholar in Architecture, 1902-03. Student of Architecture, in Europe.

Fellowship of the Cercle Français de l'Université Harvard (1903).

ROBERT CHARLES DOMINIQUE MARIE

PIERRE DUPOUEY.

Agrégé-des-lettres (*Univ. of Paris, France*) 1903.
Student of English, at this University.

As in former years, the holders of fellowships consist of two distinct groups: first, men that have ordinarily received the Doctor's degree and are continuing studies and researches of a highly specialized nature for a year or two before taking up their professional work either as teachers, or as men of science, or in literature and history; and, secondly, men younger from the point of view of academic advancement, whom the stipend of the fellowship enables to carry on studies normally for a higher degree either at this or at some other university. Of the twenty-nine fellows in 1902-03, six were already Doctors of Philosophy when they became fellows, and three others received this degree at this University, and one the degree of Doctor of Science, at the close of the year. Of the remaining nineteen, three only have no Harvard degree (two being Bachelors of Arts of Yale, and one a Bachelor of Arts of Michigan); the remaining sixteen were already Harvard Masters (thirteen) or became Masters at the close of the year (three).

Of the twenty-nine holders of fellowships in 1902-03 six are now teaching in colleges or universities (including two here), one being an assistant professor. None are connected with secondary schools. One is a research assistant, one is a museum assistant. One is in business. Of the remaining twenty fellows, nineteen are continuing their studies, twelve of them abroad, six being holders of travelling fellowships from this University, and one of a fellowship of the Archaeological Institute of America; six are resident students at this University, of whom four hold fellowships and one a scholarship. Ten of the fellowship holders for 1902-03 hold similar appointments for the present year (1903-04). The increase in the proportion of fellows who continue their studies, instead of entering directly upon teaching or other professional work, continues. This tendency, to which I called attention in my last year's report, is the natural result of the recent policy of the Faculty in bestowing these appointments to a considerable extent upon somewhat younger students than formerly.

FELLOWSHIPS AND SCHOLARSHIPS: APPLICATIONS AND APPOINTMENTS.

The following table (XIV) gives the usual statistics relative to the applications and appointments for the three successive years 1901-02, 1902-03, and 1903-04:—

TABLE XIV.—FELLOWSHIPS AND SCHOLARSHIPS (1901-04).

1. *Applications and Appointments.*

	1901-02.	1902-03.	1903-04.
Spring applicants for reappointment or promotion	42	46	42
Spring applicants for a first appointment . .	225	210	202
Later applicants	56 323	57 313	60 304
Appointed to fellowships	21	21	23
Appointed to scholarships	43	50	55
Appointed instructors, teaching fellows, or assistants	15 79	28 99	23 101
Deduct for repetitions	0	4	3
	79	95	98
Entered or continued in the Graduate School without receiving any of the above-named appointments	68	55	62
Entered undergraduate classes of Harvard College	3	8	0
Entered other Departments of the University	5 76	5 68	3 65
Applicants who were at the University in the year following their applications	155	163	163
Applicants not at the University in that year	168	150	141
	323	313	304

This table suggests various comments. There has been for four years a slow falling-off in the number of applicants (from 354 in 1900 to 304 in 1903), though the number of appointments has increased. About thirty-one per cent. of the disappointed applicants in 1902 entered the University for the academic year 1902-03; of those disappointed in 1903 the proportion is thirty-two per cent. Of the whole number of applicants in 1903 about one in three was successful. As usual the applicants in philology, philosophy, history, and political science outnumbered those in the mathematical, physical, and natural sciences by more than two to one. Of the applicants in philology about one in five was successful; in philosophy, history,

2. Classification of Applicants and Appointees.

	1901-02.		1902-03.		1903-04.	
	Applicants.	Appointees.	Applicants.	Appointees.	Applicants.	Appointees.
Students of Philology	112	19	115	22	118	24
Students of Philosophy, History, or Political Science	97	20	101	21	100	23
Students of Mathematics, Physics, or Chemistry	67	16	55	17	52	19
Students of Natural History	44	9	34	8	30	9
Students of other branches, or unclassified	3	0	8	3	4	3
	323	64	313	71	304	78
Students in the Graduate School	109	33	80	41	93	41
Students in Harvard College	28	5	35	6	42	16
Students in other Departments of the University	4	0	5	1	7	2
Former students in some Department of the University	16	4	36	5	33	9
Persons never previously members of the University	166	22	157	18	129	10
	323	64	313	71	304	78
Harvard Bachelors of Arts or Science, not previously graduated elsewhere	29	10	23	9	32	16
Harvard Bachelors of Arts or Science, previously graduated elsewhere	17	6	23	9	11	2
Graduates of other institutions, not Harvard Bachelors of Arts or Science	235	46	210	46	204	44
Undergraduates of Harvard College or Lawrence Scientific School, not already graduated elsewhere	19	2	26	7	36	14
Undergraduates of other institutions and other non-graduates	23	0	31	0	21	2
	323	64	313	71	304	78

and political science, more than one in five; in mathematics, physics, chemistry, and in geology and biology, more than one in three were successful. Of applicants who had been in the School, nearly one-half received appointments; of those who had never been in the University, about one in thirteen was successful. Of applicants who were students in Harvard College or were or had been students of some other Department of the University, about one in three was successful. Of Harvard Bachelors more than one in three was successful, while of the very large number that had no Harvard first

degree nearly one in four received an appointment. These proportions, which show very little variation from year to year, prove that it is an advantage to the applicant to hold the Harvard Bachelor's degree or to have been a student in the University. At the same time the large number of men not of these classes (in 1903 forty-four appointments out of two hundred and twenty-five applicants of this class) shows that the stranger is not discriminated against.

The committee in charge does not apportion the appointments among the several Departments in accordance with the number of applicants or the number of students, but aims to select — with the advice of the Departmental Committees — the most meritorious candidates individually. Hence there may be a slight fluctuation from year to year in the proportion of appointments to both the number of applicants and the number of students in the several Departments.

INSTRUCTORSHIPS, TEACHING FELLOWSHIPS, AND ASSISTANTSHIPS.

Several members of the Graduate School, beside carrying on their studies, serve the University as salaried teachers or assistants under the Faculty of Arts and Sciences, by regular appointment of the Corporation. The amount of their work as students varies from a half-course, which is technically one-eighth of full work, to four courses or more. There were in 1902-03 sixty-four such persons: eleven of them were Instructors, nine were Austin Teaching Fellows, and forty-four were Assistants. In the current year there are (in November, 1903) sixty-four such persons, — five Instructors, fourteen Austin Teaching Fellows, and forty-five Assistants. Besides these fourteen Austin Teaching Fellows there are six others who are not registered members of the Graduate School.

Of the three hundred and twenty-five members of the School in 1902-03, one hundred and thirty-eight — or nearly forty-three per cent. (as against forty per cent. in 1901-02, and thirty-three per cent. in 1900-01) — received stipends either as teachers, assistants, fellows, or scholars. Furthermore, other members of the School, as well as some of these, held paid proctorships, parietal or examination.

NEW FELLOWSHIPS AND SCHOLARSHIPS.

Three fellowships and five scholarships for students in the Graduate School were founded in the year 1902-03, interesting special conditions attaching to each. The names and brief descriptions of these foundations follow.

The Fellowship of the Cercle Français de l'Université Harvard. — Mr. James H. Hyde of New York has offered for the years 1903-04 and 1904-05 a resident fellowship in the Graduate School, with an annual stipend of six hundred dollars, the appointment to which is to be made by the President and Fellows of Harvard College on the recommendation of the Minister of Public Instruction of the French Republic. The incumbent is to be a young Frenchman who has shown proficiency in literary studies. He is expected to give, during his incumbency, a certain amount of assistance in the French instruction offered by the Department of French and other Romance Languages; and he is to be admitted to any courses of instruction in Harvard University which he may be qualified to pursue.

The Fellowship of the Ministry of Public Instruction of the French Republic. — The French Ministry of Public Instruction has established a fellowship at the University of Paris for the years 1903-04 and 1904-05, with a stipend of six hundred dollars. The appointment to this fellowship is made by the French Minister of Public Instruction on the recommendation of the President of Harvard University. The incumbent is to be a student or graduate of Harvard University, chosen for his proficiency in literary studies. He is to give a certain amount of instruction in the English language and literature under the direction of the Minister of Public Instruction, and is to be admitted to such courses of study at the University of Paris as he may be qualified to pursue.

The George W. Dillaway Fellowship. — This was established in 1903 under the will of George W. Dillaway, of the Class of 1865, who bequeathed five thousand dollars to the President and Fellows, "the income to be used to support a Fellowship of one year's duration in favor of the graduate from year to year who passes his examination with highest honor in Modern History. The Fellowship is to be called after my name. I do this in recognition of the benefit I received from a Scholarship when an undergraduate." The stipend of this fellowship is two hundred dollars.

The George H. Emerson Scholarships. — These are four in number, with an income of two hundred and twenty-five dollars each. George H. Emerson's residuary bequest, which is in the hands of the Trustee under his will, became available in 1903, when it was valued at about twenty-five thousand dollars, for the establishment of these scholarships. Mr. Emerson's will, made in 1865, provides that the income shall "be divided into four equal portions to be devoted to the establishment of four scholarships in the Lawrence Scientific School, one in each of the Departments of Zoölogy, Geology, Mineralogy,

and Chemistry; the condition of this bequest being that these scholarships shall be open only to needy and meritorious students who are not paid assistants in and are regular graduates of one of the aforesaid Departments and who are desirous of continuing their studies in either of such Departments, such scholarships to be granted at the discretion of the Faculty of the said Lawrence Scientific School, and any surplus income which may accumulate by reason of the vacancy of any of said scholarships to be added to the principal of this bequest."

The George Foster Peabody Scholarship.— This was founded with a principal of six thousand dollars by George Foster Peabody, in connection with the graduation of his nephew, Charles Samuel Peabody, of the Class of 1902. The income, which at present is two hundred and fifty dollars, is "to be used for a scholarship in the Graduate School of Harvard University, the scholar to be nominated by the Chancellor of the University of Georgia from among the recent graduates of that institution."

The Association of American Universities, to the annual meetings of which reference has regularly been made in these reports, met for its fourth annual conference, on December 29–31, 1902, at Columbia University, President Eliot and the writer being the representatives of this University. There were papers on "The Certificate Method of Admission to Colleges and Universities," "The Requirements for Admission to Professional Schools," and "Uniformity of University Statistics." The Association has enlarged its scope, having already departed from its original aim; it was founded (in 1900) "for the purpose of considering matters of common interest relating to graduate studies," such as are pursued in the Graduate Schools of Arts and Sciences (or the philosophical Faculties) of American and foreign universities.

In the report of the Dean of the Faculty (above, p. 92) is given a brief statement of the legislation of the Faculty of Arts and Sciences in the course of the year with regard to the degree of Master of Arts. This action had a two-fold purpose: first, to render access to the degree simpler and more rational—though not necessarily easier—for men who come from other good colleges; and, secondly, to secure a more consistent, a more carefully considered, and a better supervised preparation for the degree on the part of all candidates. Graduates of good colleges and scientific schools are now admitted to candidacy for the degree on substantially

the same terms as Harvard Bachelors, and the practice has been discontinued of "rating" candidates in terms of the Harvard Bachelor of Arts, whereby conditions were often imposed in terms of the Harvard entrance requirements. All candidates are now required to devote not less than one year of resident study to advanced work approved by the Administrative Board as affording suitable preparation for the degree and completed with high credit. A year's work is no longer defined in terms of "courses," though candidates who offer such for the degree must pursue at least four of them or their equivalent. Programmes of study for the degree are ordinarily referred to the proper Division Committees on Honors and Higher Degrees for their consideration and approval, but the final responsibility for approval remains with the Administrative Board, which is required to see to it that "the present standard of the degree be maintained." The programmes of study for the degree must each form a consistent plan of advanced work and must be pursued with some definite aim. The Administrative Board has always understood this to mean that they must be marked by unity of subject or field—the studies in these cases being in some one Department or in related Departments; or by unity of theme—in which case the courses may conceivably fall in two or more Departments (as programmes on themes in comparative literature). In a few cases, if more than half of the candidate's work is of a sufficiently advanced nature and is suitably unified in subject or theme, the remainder of it may be taken in a field less closely related to the main field or theme. Discretion is given the Divisions to impose minor conditions—such as a reading knowledge of French and German, or a knowledge of certain elementary subjects—which may in some instances demand more than a single year of work, certainly more than the four courses which have long been regarded as a normal year's work.

The good effect of these regulations is already apparent, not only in the number and quality of the Graduate Students who are candidates for the degree in the present year, but also in the spirit in which their work is done.

The Administrative Board, with the concurrence of the Administrative Board of the College, renewed its ancient recommendation that the degree of Bachelor of Arts be no longer conferred in the Graduate School. The Faculty unanimously adopted this recommendation. After the current academic year (1903-04) graduates of other colleges who desire to become Harvard Bachelors of Arts will be required to be registered in Harvard College as candidates for the degree.

At present a considerable number of the members of the Senior

Class each year, having entirely or nearly completed the tale of courses required for the Bachelor's degree before becoming Seniors, fulfil the technical requirements for the Master's degree in their Senior year; they receive, however, the Bachelor's degree at the close of this year and the Master's degree a year later — being "postponed A.M.'s" — without further residence or study. The programmes of these men for the Master's degree frequently give the Division Committees and the Administrative Board much concern; excellent in themselves as constituents in an undergraduate course of study they commonly lack the elements of unity and coherence and often are necessarily somewhat elementary in character, these being defects that are seldom found in the programmes of the more advanced Graduate Students for whom the Master's degree is the normal degree. The facility with which undergraduates have obtained the Master's degree has furthermore tended to impoverish the Bachelor's degree. It would have been better for these young men, in many instances, to have used their Senior year in winning an enriched and more distinguished Bachelor's degree, devoting their time and strength, for example, in less hurried fashion to the securing of Honors — which they cannot ordinarily do if their "courses" are to be used for the Master's degree — rather than to have sought to obtain a higher degree which is really less appropriate for them. It might be well, therefore, for the Faculty to deny to men registered as undergraduates the privilege of securing the Master's degree on Senior year work, and to require that all candidates for the Master's degree shall not only have fulfilled the requirements of the Bachelor's degree, but shall be registered in a graduate department, either the Graduate School or one of the graduate professional schools. Such legislation would surely tend to improve the Bachelor's degree, and it would also improve the Master's degree.

Besides this new recommendation — that the degree of Master of Arts should not be given for work done by undergraduates — certain recommendations and suggestions made in former reports, in the interest of the Graduate School and of graduate instruction, are respectfully renewed. These are, that the publication of the theses of Doctors of Philosophy and Science should be a requirement at this University; that a Quadrangle or Hall should be provided for resident members of the School; that an Association of the Graduate School should be formed to hold an annual festival, like the Alumni Associations of other Departments of the University; and perhaps that the Board of Overseers might serve the cause of higher instruction at this University by establishing a committee "to visit the

Graduate School," similar to the committees "to visit the Law School," "to visit the Lawrence Scientific School," etc., — unless, to be sure, the Graduate School is still to be regarded as an incorporate part of the College, with its needs sufficiently looked after by the committees appointed for the several Departments of instruction. Such a general committee might in conference with the Administrative Board receive and spread information about the work of the School, and suggest lines of policy as well as improvements that would tend to enlarge the School and widen the range of the influence of Harvard University.

The formal opening meeting of the School for the current year (1903-04) was held on Thursday evening, October 8, in the Faculty Room. The principal address was by Professor A. Lawrence Lowell, on "The Belief that the Interests of All Men Coincide." Short addresses were made by Dr. William Everett and Professor W. W. Goodwin, of the Board of Overseers, and by Mr. Norman F. Hall, President of the Graduates' Club. These were followed by a reception.

JOHN HENRY WRIGHT, *Dean*.

THE DIVINITY SCHOOL.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,—I have the honor to present the following report concerning the Divinity School for the year 1902–03.

Professor E. C. Moore began his service of the School in October, 1902; Assistant Professor Ropes was elected Bussey Professor of New Testament Criticism and Interpretation in April, 1903, and Dexter Lecturer on Biblical Literature in September, 1903; Rev. H. H. Haynes continued as instructor in Semitic Languages; Mr. I. L. Winter and his assistant, Mr. A. S. Hills, were appointed to offer to the School the same system of instruction in Elocution as that already in force in the College and the Law School. The Divinity School is thus equipped with a larger staff (8 Professors, 1 Assistant Professor, 2 Instructors, 1 Assistant, 1 Librarian), and offers a more varied and systematic series of elective courses than in any preceding year (Old Testament, 9 courses; New Testament, 5 courses; Church History, 3½ courses; History of Religions, 1½ courses; Theology, 3 courses; Social Questions, 2 courses; Homiletics and Pastoral Care, 3½ courses; Elocution, 1½ courses). Professor Toy was on leave of absence during the year. Professor E. C. Moore gave the introductory address on “The Growth of the Idea of Authority in the Christian Church.” Forty students were registered in the School during the year, though, for the greater part of the year, the number in residence was 37, being precisely the number of the preceding year. Of those in residence for the whole year but three elected less than a full year’s work. The work of the year was, therefore, serious and sustained. The distribution of electives in different departments, as herewith presented, justifies by its proportionate choices the large range of liberty given to the students of the School.

Old Testament	22½	elections.
New Testament	19½	“
Church History	17	“
History of Religions	12	“
Theology	19½	“
Social Questions	19	“
Homiletics	26	“
Elocution	5	“

The Divinity School is the only department in the University having its own dormitory. This fact has, however, not always been to the advantage of the School. Divinity students have found themselves segregated from the main movement of university life, and since Divinity Hall is an inexpensive lodging-place, rooms not occupied by Divinity students have, as a rule, been taken by College students who were willing to sacrifice comfort to economy. The building has thus for many years been in disfavor among many students of the University; and the School has borne the reputation of being the resort of few who could live elsewhere. The brevity of a college tradition is illustrated by the fact that in a half-dozen years Divinity Hall has been transformed into one of the most popular dormitories, and is now occupied by a select and congenial colony. A pleasant Common-Room makes a meeting place for all occupants of the Hall, a large bath-room with four slate compartments for shower-baths, and a reserved tennis court are provided; and application for residence by students not members of the School must be approved by the Dean. Students of the Graduate School and the professional schools are preferred in these applications, which are now in excess of the capacity of the Hall. The establishment of a social centre within a dormitory, and the giving of a specific character to dormitory life, is not without instructiveness for the administration of other University buildings.

An important characteristic of the School is its relation with other departments of the University. Opportunities are given to Divinity students of election beyond the curriculum of Theology; and other students are given the corresponding opportunity of entering courses in Theology. This relation grows constantly closer. On the one hand, Divinity students may count, subject to the approval of the Faculty, out of 14 courses for the degree of S.T.B. two courses which are not announced by the Faculty of Theology; and on the other hand, seven of the Faculty of Theology are members of the Faculty of Arts and Sciences, and offer the greater part of their courses to students not registered in the Divinity School. This intimate relationship is to the great advantage of the Divinity School. It establishes its position as a University School; it fixes in it the same standards of work which prevail in other departments; it sets Divinity students in immediate competition with other advanced students of the University; and it encourages in other students appreciation and respect for theological studies. On the other hand, the relation is of at least equal advantage to students not of the

Divinity School. It enlarges the curriculum of the Faculty of Arts and Sciences by about thirty courses; and draws to the service of the College and the Graduate School, as teachers, administrators, and members of committees, colleagues whose predecessors passed their days in a corner of University life. The proportions of this interchange of instruction are represented in the following table, and indicate, first, the range of University studies which appear to be most inviting to Divinity students; secondly, the studies of the Divinity School which are attended by students outside the School. The Divinity School profits directly by the relation to the extent of 25 elections; the Graduate School and the College to the extent of 253 elections.

Divinity students taking courses offered only by the Faculty of Arts and Sciences, 1902-03 :—

Semitic	4½ elections.
Greek	1 “
English	1 “
German	1 “
History	3 “
Economics	2 “
Philosophy	12 “
Geology	<u>4</u> “
	25 “

Non-Divinity students electing courses offered by the Divinity School, 1902-03 :—

Old Testament	58 elections.
New Testament	11 “
Church History	11 “
History of Religions	44 “
Theology	2 “
Social Questions	<u>127</u> “
	253 “

This increasing association of the Divinity School with other courses of advanced study has brought with it new problems of adjustment, and suggests new ways of usefulness. Registration of students for theological, philosophical, and sociological studies may be made with almost equal convenience in the Divinity School or the Graduate School. Both have the same fee and the same standards of work, and students in either department may elect courses in the other. A friendly understanding has, therefore, been entered upon

which provides that such registration shall be made, subject to the preference of the student, on the basis of professional training and intention. A student educated for the ministry, and entering the University to equip himself for a more effective ministry, is recommended to register in the Divinity School; while a student whose professional purpose is philosophy or teaching is directed to the Graduate School, even though his studies may lie within the curriculum of the Divinity School. This adjustment, which is not without difficulties in detail, has been generously promoted by the Dean of the Graduate School.

A second innovation which is likely to have increasing importance in the history of the School is the resort to its instruction of mature students who have already begun their professional life. The Graduate School, in addition to students proceeding directly from College to the higher degrees, registers a considerable group of students who have a year of absence from their professional work, or who are pausing at the University between one appointment and another. The same class of students now begins to turn to the Divinity School. Settled pastors who find their professional training inadequate or misdirected; ministers who realize that they must force themselves to systematic study if they are to give effective service; candidates who are pausing between one settlement and another for intellectual refreshment, turn to the Divinity School for encouragement and instruction. These students should not disarrange the present plan of the School to give a systematic training of three years leading to a degree; but this new group of scholars testifies to a healthy recognition of the new demands of scholarship on the Christian ministry, and the curriculum of the School should take account of these new needs.

The forty students enrolled in the year 1902-03 were distributed as follows:—

Resident Graduates	17
Senior Class	7
Middle Class	4
Junior Class	7
Special Students	5
Total	40

Twenty-three colleges were represented as follows : —

Antioch College	1	Rollins College	1
Bates College	1	Simpson College	1
Bowdoin College	1	Southern University	1
Brown University	3	University of Toronto	1
Dartmouth College	1	Trinity College	1
Geneva College	1	Tufts College	1
Harvard University	8	Valparaiso College	1
Kenyon College	1	Weesleyan University	1
University of Maine	1	Yale University	1
University of Missouri	1		
Mount Union College	1		32
Muhlenberg College	1	Counted more than once	2
University of Pennsylvania	1		30
Queen's University	1		

Seventeen theological seminaries were represented as follows : —

Andover Theological Seminary	1
Allegheny Reformed Presbyterian Theological Seminary	1
Bangor Theological Seminary	1
Boston University	2
University of Chicago	1
Concordia Theological Seminary	1
Christian Biblical Institute	1
Theological Seminary, Evangelical Lutheran Church, Philadelphia, Pa.	1
Garrett Biblical Institute	1
Harvard University	1
Meadville Theological School	4
Newton Theological Institution	1
Divinity School of the Protestant Episcopal Church in Philadelphia	1
Queen's University	1
St. Lawrence University	1
Tufts College	1
Vanderbilt University	1
	21
Counted more than once	1
	20

Five members of the School were recommended for the degree of S.T.B., and four received the degree of A.M.

A Summer School was held, as in the four preceding years, from July 7 to July 23; the entire series of forty-five lectures being devoted to the subject: "Principles of Education in the Work of the Church." The Faculty of the School was reinforced by representatives of Dartmouth College, the University of Chicago, Northwestern University, the Meadville Theological School, and by

the Rev. Samuel M. Crothers, D.D. The five sessions of the School have had the following record of attendance : —

	Men.	Women.	Total.
1899	96	9	105
1900	52	2	54
1901	84	5	89
1902	74	4	78
1903	54	4	58

The distribution by denominations, in the case of ministers attending in the five years, was as follows : —

	Orthodox Congregational.	Unitarian Congregational.	Episcopalian.	Universalist.	Baptist.	Presbyterian.	Disciples.	Methodist.	Free Baptist.	Lutheran.	Christian Connection.	German Reformed.	Moravian.
1899	27	17	16	14	5	3	..	..	..	..	..	..	..
1900	17	6	3	14	6	..	3	3	..	..	..	..	..
1901	28	12	11	14	5	2	..	10	1	1	..	..	..
1902	28	7	15	3	5	1	1	8	1	1	..	..	..
1903	21	4	10	5	..	5	3	1	1	..	1	1	1

The following is a list of the Courses of Instruction offered in the School in the year 1902-03. With each course is a statement of the number of students electing it from the Divinity School, the Graduate School, and from the College. There is appended to the list of regular courses a list of the lectures of the Summer School. Almost all of the students enrolled in the Summer School attended all its courses.

COURSES OF INSTRUCTION.

INTRODUCTION TO THE STUDY OF THEOLOGY.

Professor G. F. MOORE. — Twelve lectures (*first half-year*). (Not counted for a degree.) 6 Div.

OLD TESTAMENT.

1. Dr. HAYNES. — Hebrew. Davidson's Introductory Hebrew Grammar. Explanation of parts of Genesis and of the Psalm-book. 5 Col.

2. Professor LYON. — Hebrew (second course). — Syntax. Interpretation of parts of the Prophets and the Poetical Books. Text-criticism. 3 Div., 2 Col.

3. Dr. HAYNES. — Hebrew (course for rapid reading). *Half-course*.

- 3 *hf.* Dr. HAYNES. — Jewish Aramaic. Kautzsch's *Biblisch-Aramäische Grammatik*. — Interpretation of parts of Ezra, Daniel, and the Targums. *Half-course*. 2 Div., 1 Col.
4. Professor LYON. — History of Israel, political and social, till the capture of Jerusalem by the Romans. Text-books, lectures, and theses. 40 Col.
5. Professor G. F. MOORE. — History of Hebrew Literature. 7 Div., 2 Col.
6. Professor G. F. MOORE. — History of the Hebrew Religion. 5 Div., 2 Gr., 2 Col.
7. Dr. HAYNES. — Assyrian. Lyon's *Assyrian Manual*. Delitzsch's *Assyrian Grammar*. Delitzsch's *Assyrische Lesestücke* (ed. 4). 1 Div., 1 Gr., 3 Col.
8. Professor LYON. — Assyrian (second course). Delitzsch's *Assyrian Grammar*. The Chaldean Epic. Letters and Commercial Documents. 3 Div.
20. Research courses. The instructors will arrange and supervise for any properly prepared student a line of special study on such topic as may be agreed on. 3 Div.

The Semitic Conference held meetings twice a month throughout the academic year. The subject for 1902-03 was The Relations between Egypt and Canaan. There were essays and discussions. In addition to the regular work letters from foreign correspondents were read from time to time, and notes were presented calling attention to new publications, to travels, explorations, and discoveries, and to additions to the Semitic Museum and the Semitic Library. The meetings were held in the Semitic Museum.

NEW TESTAMENT.

2. Asst. Professor ROPES. — Introduction to the Study of the New Testament. — *First half-year*: The origin and history of the New Testament writings. *Second half-year*: The teaching of Jesus Christ, and the theological and ethical ideas of the New Testament Writers. 7 Div., 6 Col.
- 6 *hf.* Asst. Professor ROPES. — The Gospel and Epistles of John. — Selected portions. *Half-course*. 4 Div., 1 Col.
- 7 *hf.* Asst. Professor ROPES. — The Apostolic Age. — Study of the Acts of the Apostles. *Half-course*. 3 Div., 1 Gr., 1 Col.
8. Asst. Professor ROPES. — The Epistles of Paul. — Selected portions. 3 Div., 1 Col.
- 14 *hf.* Professor E. C. MOORE. — The Origin and Growth of the New Testament Canon in its relation to the rise of the Catholic Church and the beginnings of the history of the Dogma. *Half-course*. 3 Div.
- 22 *hf.* Dr. HAYNES. — Classical Aramaic (Syriac). — Rödiger's *Chrestomathia Syriaca* (ed. 3). The Peshitto version of the New Testament. *Half-course*. 4 Div., 1 Col.
20. Asst. Professor ROPES. — Advanced study and research. 1 Div.

CHURCH HISTORY.

1. Professor EMERTON. — General Church History to the end of the Seventeenth Century. 8 Div., 2 Gr., 6 Col.
5. Professor EMERTON. — History of Christian Thought, considered in its relation to the prevailing philosophy of each period from the earliest time to the Eighteenth Century. 8 Div., 2 Gr., 1 Col.
- 6¹/₂f. Professor EMERTON. — Selected Topics from the Canon Law. *Half-course.*
20. Professor EMERTON. — Advanced study and research.
2. Professor G. F. MOORE. — History of Religions in Outline. 11 Div., 2 Gr., 42 Col.

THEOLOGY.

1. Professor FENN. — Outlines of Christian Theology. 9 Div.
- 2¹/₂f. Professor FENN. — New England Theology. *Half-course.* 3 Div.
- 3¹/₂f. Professor FENN. — Typical Systems of Christian Theology. *Half-course.* 3 Div.
6. Professor E. C. MOORE. — The History of Christian Thought since Kant, including a discussion of the present state and tendencies of theological thought. 9 Div., 1 Gr., 1 Col.

SOCIAL QUESTIONS.

1. Professor PEABODY. — Introductory course. The Ethics of the Social Questions. — The modern social questions: Charity, the Family, Temperance, and various phases of the Labor Question, in the light of ethical theory. — Lectures, special researches, and required reading. 7 Div., 4 Gr., 122 Col.
20. Professor PEABODY. — Sociological Seminary. Subject for the year: The Ethics of Jesus Christ. 12 Div., 1 Rad.

HOMILETICS AND PASTORAL CARE.

- 1¹/₂f. Asst. Professor HALE. — The structure and analysis of sermons. *Half-course.* 2 Div.
2. Professors PEABODY, E. C. MOORE, and FENN, and Asst. Professor HALE. — Each student writes eight sermons during the year, of which some are preached before the class and criticized by students and instructor [in Appleton Chapel], and the rest are criticized by the instructor privately. This course may be taken twice. 17 Div.
- 3¹/₂f. Asst. Professor HALE. — The Minister as Pastor, and the Direction of Church Activities. *Half-course.* 3 Div.
- 4¹/₂f. Professor PEABODY. — The Minister as Preacher, and the History of Christian Preaching. *Half-course.* 5 Div.
- 5¹/₂f. Asst. Professor HALE. — The Homiletical Use of the New Testament. *Half-course.* 1 Div.
- 6¹/₂f. Asst. Professor HALE. — The Homiletical Use of the Old Testament. *Half-course.* 4 Div.

ELOCUTION.

1. Mr. HILLS. — Voice Training, and the Elements of Form in Speaking. In classes of three or four. Preparatory to Course 2. (Not counted for a degree.) 6 Div.
- 2 *hf.* Mr. WINTER. — Sermon Delivery, Scripture Reading, Oral Discussion. *Half-course.* 8 Div.

SUMMER SCHOOL OF THEOLOGY.

Professor H. H. HORNE. — Four lectures: The Foundations of Education.

Rev. S. M. CROTHERS, D.D. — Four lectures: (1) Modern Educational Ideals and their Effect upon Religious Education. (2) The Meaning of Historical Continuity. (3) Education and Natural Piety. (4) The Educational Principle of Correlation.

Professor F. A. CHRISTIE. — Three lectures: Conversion and Christian Nurture as Illustrated in the History of the New England Churches.

Professor G. A. COE. — Six lectures: The Problems of Religious Education.

Professor G. B. FOSTER. — Six lectures: Authority and its Educational Value in the History of Christianity.

Professor E. EMERTON. — Five lectures: The Materials and Methods of the Study of Church History.

Professor G. F. MOORE. — Four lectures: Current Theological Literature.

Professor J. H. ROPES. — Two lectures: Exegetical Study: The Righteousness of God in Isaiah and in Paul.

Professor E. C. MOORE. — Five lectures: Modern Thought, and the Minister as Teacher.

Professor E. HALE. — Three lectures: Homiletical Study: The Sermon on the Mount; The Parables; The Letters of Paul.

Professor N. S. SHALER. — One lecture: The Emergence of the Religious Sentiment.

Professor F. G. PEABODY. — Two lectures: The Religion of an Educated Man.

During the year from October 1, 1902, through September 30, 1903, there were added to the Library 306 volumes and 21 pamphlets by purchase, and 288 volumes and 626 pamphlets by gift. October 1, 1903, there were in the Library 33,236 volumes and 8,850 pamphlets. During the year 715 titles were catalogued in the author catalogue and 654 titles in the subject catalogue. There were borrowed from the stack for home use 1,181 volumes, from the stack for hall use 415 volumes, from the reserved books for overnight use 884 volumes.

Early in the year the addition to the Library building was completed. This addition gives two comfortable rooms, one for the use of the Librarian and Secretary, the other for the Library Assistants. These have added very much to the efficiency and comfort of the work. The reading-room is now reserved for its proper uses, except for the delivery desk, as it is no longer necessary to use one of the alcoves for cataloguing purposes. The Secretary now has a convenient room with proper privacy instead of the inconvenience and publicity of a desk in the stack. The basement of the addition connects directly with the stack and has shelving room for about 4,000 volumes.

FRANCIS G. PEABODY, *Dean*.

THE LAW SCHOOL.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,—I have the honor of presenting my report upon the Law School for the academic year 1902-03.

The table on pages 166, 167 gives the courses of study and instruction during the year, the text-books used, the number of exercises per week in each course, and the number of student

Year.	Whole No. of Students.	Total of College Graduates.	Harvard Gradu- ates.	Graduates of other Colleges.	Non- Gradu- ates.	Per cent. of College Graduates.	No. of Col- leges rep- resented.
1870-71	165	77	27	50	88	47	27
1871-72	138	70	34	36	68	51	25
1872-73	117	66	34	32	51	56	25
1873-74	141	86	49	37	55	61	25
1874-75	144	82	63	19	62	57	18
1875-76	173	93	60	33	80	54	25
1876-77	199	116	74	42	83	58	30
1877-78	196	121	80	41	75	62	30
1878-79	169	109	71	38	60	64	24
1879-80	177	118	90	28	59	66	20
1880-81	161	112	82	30	49	70	19
1881-82	161	99	66	33	62	61	22
1882-83	138	93	58	35	45	67	32
1883-84	150	105	75	30	45	70	25
1884-85	156	122	85	37	34	78	31
1885-86	158	122	83	39	36	77	29
1886-87	188	143	88	55	45	76	34
1887-88	225	158	102	56	67	70	32
1888-89	225	158	105	53	67	70	32
1889-90	262	189	122	67	73	72	41
1890-91	285	200	135	65	85	70	33
1891-92	370	257	140	117	113	69	48
1892-93	405	266	132	134	139	66	54
1893-94	367	279	129	150	88	76	56
1894-95	413	310	139	171	103	75	74
1895-96	475	380	171	209	95	80	82
1896-97	490	408	186	222	82	83	82
1897-98	551	490	229	261	61	89	77
1898-99	564	503	212	291	61	89	78
1899-00	613	557	236	321	56	91	67
1900-01	655	605	252	353	50	92	83
1901-02	633	584	247	337	49	92	92
1902-03	644	600	241	359	44	93	94
1903-04	741	693	272	421	48	94	111

who offered themselves for examination in each course at the end of the year.

During the twelve months from October 1, 1902, to October 1, 1903, 8,392 bound volumes and 440 pamphlets were added to the library. The library contained, October 1, 1903, about 75,800 volumes and 7,000 pamphlets.

The exceptionally large addition to our books in the past year is due to two notable gifts from Mr. Learned Hand and from Mr. Edmund James Drifton Coxe.

Mr. Hand, who graduated at the School in 1896, gave to the library 1,420 volumes from the library of his father, the late Samuel Hand, Associate Judge of the Court of Appeals of the State of New York. An additional interest attaches to this gift from the fact that many of the books belonged at one time to two other eminent New York lawyers, Esek Cowen and Nicholas Hill. This gift was especially welcome as coming from an alumnus of the School.

To Mr. Coxe, an alumnus of the Scientific School, we are indebted for his gift of the law library of his father, the late Brinton Coxe, consisting of 3,225 volumes and 92 pamphlets, and containing many rare volumes of English, American, Roman, and Canon law. Mr. Coxe's gift, by far the largest and most valuable gift of books ever received by the School, includes a nearly complete set of the decisions of the Rota Romana, which will always be one of the distinctions of our library.

The table on page 164 exhibits the growth of the School during the last thirty-two years, in the number of the students, the number and percentage of college graduates, and in the number of colleges represented by their graduates. The figures for the current year will be slightly increased by later entries.

The number of non-graduates, 48, is somewhat misleading. Thirty-six of these are Harvard College Seniors, on leave of absence and registered in the Law School, of whom 31 have completed the work for the degree of A.B., and 5 are deficient only in college admission requirements. If these 36 seniors be transferred to the College Graduate column, we have 728 graduates, and the percentage of college graduates rises from 94 to 99.

It will be observed that the gain in the number of students in the current year exceeds that of any preceding year. Not less interesting is the increase in the number of colleges represented in the School. This growth of the School seems not to be traceable to any special or temporary cause, but to be the result of a spreading

Instructors.	Studies and Text-books.	Exercises per week.	Number of students examined.
First Year.			
Prof. Williston	Contracts. Cases on Contracts: Langdell, vol. 1 (3d ed.), Williston, vol. 2 . .	3	233
Asst. Prof. Westengard }	Property. Gray's Cases on Property, vols. 1, 2	2	247
Prof. Smith	Torts. Cases on Torts: Ames, vol. 1 (2d ed.), Smith, vol. 2	2	248
Prof. Beale. Mr. Peabody . .	Criminal Law and Procedure. Beale's Cases on Criminal Law	2	286
— — — — —	Civil Procedure at Common Law. Ames's Cases on Pleading	1	289
Second Year.			
Prof. Wambaugh	Agency. Wambaugh's Cases on Agency	2	31
Prof. Brannan	Bills of Exchange and Promissory Notes. Ames's Cases on Bills and Notes . .	2	28
Prof. Gray	Evidence. Thayer's Cases on Evidence (2d ed.)	2	201
Prof. Ames. Prof. Beale . . .	Jurisdiction and Procedure in Equity. Ames's Cases in Equity Jurisdiction . .	2	199
Asst. Prof. Westengard }	Property. Gray's Cases on Property, vols. 3, 4	2	200
Mr. Wyman	Sales of Personal Property. Williston's Cases on Sales	2	167
Prof. Williston	Trusts. Ames's Cases on Trusts (2d ed.)	2	197
Prof. Ames	Admiralty. Ames's Cases on Admiralty	1	2
Prof. Ames	Bankruptcy. Williston's Cases on Bankruptcy	1	5
Prof. Williston	Carriers	1	9
Mr. Wyman	Contracts II. No text-book	1	3
Prof. Wambaugh	Damages. Beale's Cases on Damages	1	1
Prof. Brannan	Persons. Smith's Cases on Persons	1	9
Prof. Smith	Quasi-Contracts. Keener's Cases on Quasi-Contracts	1	4
Prof. Wambaugh			

Third Year.			
Prof. Gray	Conflict of Laws. Beale's Cases on the Conflict of Laws	2	80
Prof. Beale	Constitutional Law. Thayer's Cases on Constitutional Law	2	184
Prof. Smith	Corporations. Smith's Cases on Private Corporations (2d ed.). Smith's Cases on Municipal Corporations	2	181
Prof. Ames	Jurisdiction and Procedure in Equity. Ames's Cases in Equity Jurisdiction	2	24
Prof. Brannan	Partnership. Ames's Cases on Partnership	2	23
Ast. Prof. Westengard	Property. Gray's Cases on Property, vols. 5, 6	2	86
Mr. Wymann	Suretyship and Mortgage. Ames's Cases on Suretyship	2	122
Prof. Wambaugh	Agency. Wambaugh's Cases on Agency	2	14
Prof. Brannan	Bills of Exchange and Promissory Notes. Ames's Cases on Bills and Notes	2	78
Prof. Thayer. Prof. Beale	Evidence. Thayer's Cases on Evidence	2	2
Prof. Gray	Property II. Gray's Cases on Property, vols. 3, 4	2	2
Ast. Prof. Westengard	Sales of Personal Property. Williston's Cases on Sales	2	27
Prof. Williston	Trusts. Ames's Cases on Trusts (2d ed.)	2	13
Prof. Ames	Admiralty. Ames's Cases on Admiralty	1	12
Prof. Strobel	Bankruptcy. Williston's Cases on Bankruptcy	1	112
Prof. Williston	Carriers. McClain's Cases on Carriers and Beale's Cases on Carriers	1	62
Prof. Beale	Contracts II. No text-book	1	5
Prof. Wambaugh	Damages. Beale's Cases on Damages	1	5
Prof. Brannan	Equity III. Ames's Cases in Equity Jurisdiction	1	48
Prof. Ames	Insurance. Wambaugh's Cases on Insurance	1	42
Prof. Wambaugh	Persons. Smith's Cases on Persons	1	10
Prof. Smith	Quasi-Contracts. Keener's Cases on Quasi-Contracts	1	41
Prof. Wambaugh			

confidence in our standards and methods as illustrated in our graduates. Another evidence of this confidence is the growing disposition of other law schools in all parts of the country except the Southern States to adopt our curriculum, methods, and collections of cases.

Austin Hall is now much too small both for our students and for our books. 20,000 volumes of the library are now shelved in the annex of Lawrence Hall. The School must suffer unless the enlargement of our accommodations is begun without further delay.

With the recent change in the requirements for admission to the Medical School, that School, the Divinity School, the Law School, and the Graduate School have become coördinate departments of the University. The students in each of these professional schools are college graduates, and the curriculum in each is not less than three years. The degree conferred by these Schools, representing the same amount of collegiate and professional training, would naturally be of the same rank in point of form as well as in substance. But this desirable uniformity does not exist. The graduates of the Medical School and Graduate School receive a doctor's degree, while the graduates of the Law School and Divinity School receive a bachelor's degree. Academic propriety seems to require that the graduates of each of these schools should receive the doctor's degree. But the suggested change is desirable for other reasons than mere uniformity. If the standards of a professional school are so high that graduation means the successful completion of a collegiate as well as a professional course, it is for the interest of the University to emphasize this high standard by a degree which, from its form, suggests that it is a second degree. As a matter of justice it is difficult to defend the present discrimination against the graduates in law and divinity. On Commencement Day the graduate in law is already authorized to wear the doctor's gown. Is he any the less entitled to the doctor's degree?

JAMES BARR AMES, *Dean.*

THE FACULTY OF MEDICINE.

TO THE PRESIDENT OF THE UNIVERSITY : —

SIR, — As Dean of the Faculty of Medicine I have the honor to submit the following report for the academic year 1902-03.

In the report of last year the name of Dr. E. S. Wood was accidentally omitted as a member of the Advisory Committee appointed by the President on the location and construction of the new buildings of the Medical School. He served on this committee, and was subsequently appointed a member of the sub-committee on the Building for Physiology and Physiological Chemistry, as appears in the report.

The fee for the fourth year in the Medical School for all students entitled to be classified as fourth-year students, who have also been members of the School for three full years, has for many years been one hundred dollars, with a graduation fee of thirty dollars. Students entering the School after the academic year 1902-03 will be charged a fee of two hundred dollars for the fourth year, and will be exempt from the payment of a graduation fee.

A Students' Health Committee has been appointed from the teachers in the Medical and Dental Schools, the members of which can be consulted by the students on matters pertaining to personal health and hygienic surroundings. The Committee consists of Drs. H. C. Ernst, J. J. Putnam, E. H. Smith, J. B. Blake, and G. S. C. Badger.

The name of the Committee on Scholarships has been changed to that of Committee on Scholarships and Students' Aid, and the scope of work assigned to its members has been correspondingly enlarged.

At the close of the academic year, 141 men were recommended to the Corporation for degrees, as follows : —

Medical School . .	{	For the degree of M.D.	93
		“ “ “ <i>cum laude</i> . . .	21
Dental School . .	{	For the degree of D.M.D.	22
		“ “ “ <i>cum laude</i> . . .	5
Total			141

The Committee on the Course of Study and the Committee on Medical Education, acting as a joint committee, have held many meetings to perfect the plans outlined in a vote of the Faculty of

Medicine, establishing an elective fourth year. This change applies to the class which entered in the fall of 1902, and the first-year instruction of this class, now just completed, was based on the new arrangement. During the second term of the year Pathological Chemistry was taught in addition to Physiological Chemistry, the former having been originally a second-year subject. Changes in the second-year curriculum have been arranged for the coming year to conform to the proposed change in the fourth year.

WILLIAM L. RICHARDSON, *Dean*.

THE MEDICAL SCHOOL.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,—As Dean of the Medical School I have the honor to submit the following report for the academic year 1902–03.

The Administrative Board was constituted as follows: Drs. W. L. Richardson, J. C. Warren, E. S. Wood, F. C. Shattuck, W. F. Whitney, C. M. Green, C. Harrington, F. Dexter, and F. B. Mallory.

The Departments of Surgery, Clinical Surgery, and Orthopedic Surgery have been organized into a Division of Surgery for administrative purposes and to obtain coördinate action in the various subdivisions of Surgery.

An examination in elementary organic chemistry has been added to the requirements for admission, to take effect in and after September, 1907.

Drs. J. C. Warren, W. F. Whitney, C. S. Minot, F. B. Mallory, and W. B. Cannon were appointed a Committee to prepare an exhibit from the Medical School at the St. Louis Exposition in 1904.

Building.—The only change of importance which has been made in the Medical School building during the past year has been the extension of the ventilating apparatus. The flues connecting with the hoods in the various laboratories in the main building have been connected by means of pipes with the ventilating fan, which was formerly used only for ventilating the dissecting room. This measure has been made necessary by the erection of a high building on the opposite side of Exeter street. It was found after this building was erected that, with westerly winds, it was impossible to ventilate the laboratory hoods.

The Massachusetts Commandery of the Military Order of the Loyal Legion of the United States has placed in the Medical School building a bronze mural tablet to the memory of Zabdiel Boylston Adams, A.B., M.D., a graduate of the Medical School in 1853.

Anatomy.—During the past year many valuable specimens have been added to the collection of variations of bones of the wrist and ankle; and an element in the wrist (the *subcapitatum*) has been observed which had never before been found distinct, but always as a part of the *os magnum*. This collection promises to become, if it is not already, second only to that of the late Professor Pfitzner, of Strassburg. A series of shoulder blades, with large descriptive labels, have been arranged as a model for the exhibition of special

collections in museums. Some curious specimens of anomalies of other parts have also been added. The demonstrator, Dr. John Warren, has made several excellent preparations; and the sets of frozen sections are increasing.

An Anatomical Research Fund has been started during the year for the purpose of meeting the expenses, which seem to be constantly growing heavier, of carrying on original work, and of publishing and distributing reports of such work.

The observations which have been going on for several years on certain sexual characteristics of bones are nearly completed, and the results will soon be published.

The following list of publications represents a part of the work of the department:—

An example of a proposed arrangement of specimens of a single structure for museums. By Professor THOMAS DWIGHT. *The Journal of Medical Research*, May, 1903.

Problems of clinical anatomy. By Professor THOMAS DWIGHT. *Proceedings of the Massachusetts Medical Society*, 1903, and *Boston Medical and Surgical Journal*, July 30, 1903.

The branches of the superior mesenteric artery to the jejunum and ileum. By Professor THOMAS DWIGHT. *Anat. Anzeiger*, Bd. XXIII, 1903.

A case of hour-glass stomach observed in situ. By Professor THOMAS DWIGHT. *American Journal of the Medical Sciences*, October, 1903.

The development of the Paraphysis in the common fowl. By Associate Professor FRANKLIN DEXTER. *American Journal of Anatomy*, Vol. II, No. 1.

The anatomy of the inferior ethmoidal turbinate bone with particular reference to cell formation: surgical importance of such ethmoid cells. By Dr. H. A. LOTHROP. *Annals of Surgery*, May, 1903.

Measurements for operating-distances in the nose. By Dr. H. P. MOSHER. *Annals of Surgery*, October, 1902.

The anatomy of the operation of reaching the ethmoid cells through the antrum. By Dr. H. P. MOSHER. *American Journal of the Medical Sciences*, October, 1902.

The anatomy of the sphenoidal sinus and the method of approaching it from the antrum. By Dr. H. P. MOSHER. *The Laryngoscope*, March, 1903.

The role of atmospheric pressure in the hip joint. By Dr. S. W. ALLEN. *Boston Medical and Surgical Journal*, April 9, 1903.

Notes on the development of the pharynx after birth. By Professor THOMAS DWIGHT. *Annals of Otology, Rhinology, and Laryngology*, Vol. XI, November, 1902.

Physiology.—There have been published the following papers containing investigations by the laboratory staff:—

Further observations on the movements of the stomach and intestines. By Dr. W. B. CANNON. *The American Journal of Physiology*, 1903, Vol. VIII, pp. 21, 22.

The tonus of heart muscle. By Associate Professor W. T. PORTER. *The American Journal of Physiology*, 1903, Vol. VIII, p. 26.

New inductorium, kymograph, heart lever, heavy muscle lever, and square rheochord. By Associate Professor W. T. PORTER. *The American Journal of Physiology*, 1903, Vol. VIII, pp. 35–41.

Physiology at Harvard. By Associate Professor W. T. PORTER. Second edition. The University Press, Cambridge, Mass., 1903, pp. 110.

Experiments for students in the Harvard Medical School. By Associate Professor W. T. PORTER. Third edition. The University Press, Cambridge, Mass., 1903, pp. 117.

Observations on the mechanics of digestion. By Dr. W. B. CANNON. *The Journal of the American Medical Association*, Vol. XL, pp. 749–753.

Salivary digestion in the stomach. By Dr. W. B. CANNON and Mr. H. F. DAY. *The American Journal of Physiology*, 1903, Vol. VIII, p. 28, and Vol. IX, pp. 396–416.

The condition of the vasomotor neurons in surgical shock. By Associate Professor W. T. PORTER and Dr. W. C. QUINBY. *The Boston Medical and Surgical Journal*, Vol. CXLIX, No. 17, October 22, 1903.

Histology and Embryology.—The equipment for the elementary instruction has been improved, particularly in the quality and number of the microscopical preparations furnished to students. The sections of pig and chicken embryos furnished to each student are worthy of special mention. For several years a few new microscopes have been added annually, and it became possible this year for the first time to give all the students instruments of the best quality. The course was conducted by Drs. Bremer and Lewis, Professor Minot being absent on a half-year's leave.

The embryological collection has been increased by 143 new series of sections of embryos, which brings the total number of series up to 695. About 500 more series will complete the original plan and render the collection fairly representative of the early development of the principal types of vertebrates. It is already used as a basis of research, and as a means of confirming discoveries announced from other laboratories. Professor Minot during his absence worked at the Zoölogical Station at Naples, and obtained there a large number of early stages of *Amphioxus*, *Petromyzon*, and *Torpedo*.

which will go far towards completing the representation of fish types in the collection.

Mr. Ewing Taylor, aided by the Austin Fund, has been engaged in preparing, in collaboration with Professor Minot, the "*Normal plates*" on the rabbit, to form part of Professor Keibel's "*Normen-tafeln*." Good progress has been made. The work will be published at Jena, by Gustav Fischer. Other researches have been carried on by Professor W. A. Locy, of Northwestern University, and by Drs. Bremer, Lewis, and Warren.

The following publications have appeared : —

A Laboratory Text-book of Embryology. By Professor CHARLES S. MINOT. Square 8vo, pp. 380. P. Blakiston's Son & Company, Philadelphia.

Neurenteric canals, and Proamnion. By Professor CHARLES S. MINOT. Buck's Reference Handbook. (In press.)

Development of the lung in the opossum. By Dr. J. L. BREMER. *American Journal of Anatomy*.

The gross anatomy of a 12 mm. pig. By Dr. F. T. LEWIS. *American Journal of Anatomy*, Vol. II, pp. 211-226.

Umbilical Cord, and Yolk-sack. By Dr. F. T. LEWIS. *Buck's Reference Handbook*. (In press.)

The library has become quite extensive, the private collection of embryological literature of the Professor in charge having been deposited in the laboratory, and made accessible to advanced workers. The School subscribes to journals, and there have been added twenty-six others, and a collection of about 6,000 pamphlets, all catalogued. A large majority of modern embryological publications may at present be consulted in the laboratory itself. It is a matter of regret that provision for continuing this arrangement has not been made in the new building.

Bacteriology. — No marked changes have taken place in the instruction given in the department. It is interesting to note, however, that the form of instruction has been copied in two other medical schools so far as possible, the manuscript "laboratory exercises" having been borrowed for the purpose of founding courses upon it.

Dr. Hibbert W. Hill has been added to the force of the department as Instructor in Bacteriology, with the understanding that what instruction he may be called upon to give will be of a graduate nature.

Professor H. C. Ernst has published a small volume, "Modern Theories of Bacterial Immunity," based upon a short course of lectures given by request to the second class. He has continued the editorship of *The Journal of Medical Research*, and has taken part in and exercised supervision over many of the following pieces of work:—

Langdon Frothingham, M.D.V., has published the following: "Foot and Mouth Disease," an address to the Maine State Dairy-men's Association at Waterville, Maine, *Report of the Commissioner of Agriculture of the State of Maine*, 1902; "Foot and Mouth Disease," *Boston Medical and Surgical Journal*, January 1, 1903.

A number of specimens of Foot and Mouth Disease have been added to the Warren Museum.

Dr. S. B. Wolbach has completed a portion of his work, which is ready for immediate publication in *The Journal of Medical Research*. He has conducted experiments as follows:—I. Comparisons of tubercules from tubercle bacilli of human and bovine origin: (a) as to strength, in an attempt to standardize by finding the minimal lethal dose for tuberculous guinea pigs; (b) as to the therapeutic action of tuberculous guinea pigs. II. Comparisons of cultures of tubercle bacilli of human and bovine sources on different media and at different ages.

Dr. Calvin G. Page attended the Fourteenth Medical Congress at Madrid, and represented the department there.

Dr. F. P. Denny completed his observations on the "Morphology of *B. diphtheriae*, *B. pseudo-diphtheriae*, and *B. xerosis*," which were published in *The Journal of Medical Research*, March, 1903, Vol. IX, p. 117.

Dr. Joseph H. Pratt has published an article "On paratyphoid fever and its complications," in the *Boston Medical and Surgical Journal*, based in part upon work done in this department.

Chemistry.—Instruction in Chemistry given during the past year to the second class was the same as that given the previous year; but the instruction given to the first class was changed very decidedly, on account of the new arrangement of courses adopted by the Faculty. By this new arrangement the first class was given the whole of its instruction in Physiological Chemistry during February and March under the direction of Professor Hills. During April and May the first class was taught Pathological Chemistry under the direction of Professor Wood. This course could not be as complete as that which was given to the second class, but it is expected that the elective course in Pathological Chemistry to be given this class

during its fourth year will make up for this deficiency. It will be impossible to form an opinion in regard to the efficiency of the instruction in Pathological Chemistry under this new arrangement until this first class has completed its fourth year. As the instruction in Pathological Chemistry was given during April and May to both the first and second classes simultaneously, it was impossible to give the first class as much instruction on this subject as they will have hereafter, on account of lack of lecture-room facilities. During April and May Dr. Wood gave four exercises a week to the second class on Pathological Chemistry, and only three hours to the first class, as no lecture room or time could be obtained. Hereafter the first class will have four hours a week in Pathological Chemistry in the lecture room.

An article, by Dr. Wood, on the Medico-Legal Examination of Blood and Seminal Stains is now in press, and will be published soon in Vol. II of the *Text-book of Legal Medicine and Toxicology*, by Peterson & Haines.

Experimental Pharmacology and Therapeutics. — The following represents the work done in this department during the year: —

Ueber Durchblutung isolirter Nieren und den Einfluss defibrinirten Blutes auf die Secretion der Nieren. By Drs. FRANZ PFAFF and M. VEJUX-TYRODE. *Archiv.f. Exper. Pathol. u. Pharmacol.* 1903, Bd. XLIX.

Relation between pharmacological action of drugs and their therapeutic application. By Dr. M. VEJUX-TYRODE. *The Journal of the American Medical Association.*

Mercurial diuresis. By Dr. M. VEJUX-TYRODE and Mr. L. NELSON. *The Journal of Medical Research*, August, 1903, Vol. X, No. 1.

On the influence of various fats on the formation and excretion of acetone. By Dr. E. P. JOSLIN. *Transactions of Association of American Physicians*, 1903.

A new method of performing metabolism experiments. By Mr. FRANCIS MCCRUDDEN. *The Journal of Medical Research*, March, 1903.

Eine Methode den anorganischen Stoffwechsel zu studiren. By Mr. FRANCIS MCCRUDDEN. *Verhandlungen des Kongresses für verwandte chemie*, Berlin, May, 1903.

A study of the condition of the uric acid in the urine. By Mr. FRANCIS MCCRUDDEN. *Boston Medical and Surgical Journal*, August, 1903.

Pathology. — The department is now enabled, by means of a fund provided by Dr. W. N. Bullard and Dr. J. J. Putnam, of Boston, to develop neuropathology more fully, and to bring it in closer relation

with general pathology. The plans now developed for this work will be on trial for a period of five years, and involve (a) the examination and report of the pathological side of such nerve cases as the department controls, and (b) the prosecution of research both on accepted lines (the system-diseases, the cellular pathology of the cerebral cortex, and studies in the neuroglia reaction) and on such original lines as may offer. The laboratory also offers its services in the investigation of material from institutions and in assisting the investigation of nervous diseases.

A preliminary report of the investigations carried on by members of the department on small-pox has been made. During the spring and summer Professor G. N. Calkins, of Columbia University, has been associated with members of the department in this work. A full report embracing the anatomical lesions and etiology of small-pox and vaccinia is now in preparation, and will appear in January. Papers on various aspects of the disease were read by Professor Councilman, Dr. Magrath, and Dr. Brinckerhoff at the meeting of the Society of Pathologists and Bacteriologists in Washington in May. One thousand dollars has been given in aid of the work, by an unknown donor, and two fellowships and one thousand dollars by the Rockefeller Institute.

Dr. H. A. Christian spent the summer in Tübingen working on leucotoxins in Professor Krehl's laboratory.

The following papers by the members of the department and by men working under them in the Pathological Laboratories of the School and the Hospitals have been published during the past year : —

Blank-cartridge wound infected with tetanus bacilli, prompt excision; no tetanus. By Dr. JOHN BAXTER BAIN. *Annals of Surgery*, 1903, Vol. XXXVII, p. 399.

Ring bodies (nuclear remnants?) in anaemic blood. By Dr. R. C. CABOT. *The Journal of Medical Research*, February, 1903, Vol. IV, p. 15.

A study of the urinary analyses and post-mortem findings in five hundred cases of disease affecting the kidneys. By Dr. R. C. CABOT. One of the Cartwright Lectures of the Alumni Association of the College of Physicians and Surgeons, New York, delivered December 17, 1902.

A sketch of the history of the treatment of chlorosis with iron. By Dr. H. A. CHRISTIAN. *Medical Library and Historical Journal*, July, 1903.

Neuroglia tissue and ependymal epithelium in teratoid tumors. By Dr. H. A. CHRISTIAN. *Journal of the American Medical Association*, 1903, Vol. XLI, p. 593.

The fats of pneumonic exudations. By Dr. H. A. CHRISTIAN. *The Journal of Medical Research*, 1903, Vol. X, p. 109.

Tuberculosis. By Professor W. T. COUNCILMAN. *Reference Handbook of the Medical Sciences*.

A preliminary report on the etiology of variola. By Professor W. T. COUNCILMAN, and Drs. G. B. MAGRATH and W. R. BRINCKERHOFF. *The Journal of Medical Research*, 1903, Vol. IX, p. 372.

Observations on the distribution and culture of the chancroid bacillus. By Dr. LINCOLN DAVIS. *The Journal of Medical Research*, 1903, Vol. IX, No. 4, p. 401.

Two cases of complete Bilateral Duplication of the ureters. By Dr. A. H. GOULD. *American Journal of Medical Science*, 1903, Vol. CLII, p. 428.

The diagnosis of gonorrheal urethritis. By Dr. A. H. GOULD. *The Boston Medical and Surgical Journal*, 1903, Vol. CXLVIII, p. 412.

Eleven acute and eighteen chronic cases of influenza. Proved by bacteriological examination. By Dr. F. T. LORD. *The Boston Medical and Surgical Journal*, 1903, Vol. CXLVII, No. 25, p. 662.

Sarcoma. By Associate Professor F. B. MALLORY. *Reference Handbook of Medical Sciences*.

Tumors. By Associate Professor F. B. MALLORY. *Reference Handbook of Medical Sciences*.

A case of acute epididymitis in an undescended testicle, with gonococci demonstrated in the excised organ. By Dr. F. T. MURPHY. *The Boston Medical and Surgical Journal*, 1903, Vol. CXLIX, p. 36.

Upon the presence of the typhoid bacillus in the urine and sputum. By Dr. MARK W. RICHARDSON. *The Boston Medical and Surgical Journal*, Vol. CXLVIII, p. 152.

A method for staining sputum for bacteriological examination. By Dr. WILLIAM H. SMITH. *The Boston Medical and Surgical Journal*, 1902, Vol. CXLVII, No. 25, p. 659.

A case of chronic internal hydrocephalus in a youth. By Drs. E. E. SOUTHARD and F. W. ROBERTS. *Medical and Surgical Reports, Boston City Hospital*, 1903.

A case of carcinosis with nodule secondary in the eye. By Dr. E. E. SOUTHARD. *The Boston Medical and Surgical Journal*, September, 1903.

An experimental study of the bacteriolytic complement content of the blood serum in normal, vaccinated, and variolated rabbits. By Dr. R. L. THOMPSON. *The Journal of Medical Research*, 1903, Vol. X, No. 1.

The complement content of the blood serum in variola. By Dr. R. L. THOMPSON. *The Journal of Medical Research*, 1903, Vol. X, No. 1.

A case of extreme malformation of the heart. By Dr. J. H. WRIGHT. *Transactions of the Association of American Physicians*, 1903.

Syncytioma. By Dr. E. E. TYZZER. *Reference Handbook of Medical Sciences*.

Comparative Pathology.—The work of this department during the year did not differ appreciably from that of the preceding year. Since, in the absence of trained assistants, whatever work is done in teaching and preparing therefor falls almost wholly on the professor, the two courses now given consume an undue amount of time. The work of the laboratory has been continued, however, as usual, and the following publications issued:—

The sources, favoring conditions, and prophylaxis of malaria in temperate climates with special reference to Massachusetts. By Professor THEOBALD SMITH. *The Shattuck Lecture, Massachusetts Medical Society*, 1903; *Medical Communications*, Vol. XIX, pp. 349–410, and *The Boston Medical and Surgical Journal*, 1903.

Concerning the probable effect of the proposed fresh-water basin (Charles River) on the occurrence of malaria, etc. By Professor THEOBALD SMITH. *Report of Committee on Charles River Dam*, 1903, Appendix, pp. 111–129.

The agglutination-affinities of related bacteria parasitic in different hosts. By Professor THEOBALD SMITH and Dr. A. L. REAGH. *The Journal of Medical Research*, Vol. IX, pp. 270–300.

The non-identity of agglutinins acting upon the flagella and upon the body of bacteria. By Professor THEOBALD SMITH and Dr. A. L. REAGH. *The Journal of Medical Research*, Vol. X, pp. 89–100.

A study of the necroses occurring in the livers of experimental animals after inoculation with hog-cholera bacilli. By Mr. C. H. BOXMEYER. *The Journal of Medical Research*, Vol. IX, pp. 146–164.

(The three last-mentioned investigations were aided by the Rockefeller Institute for Medical Research.)

During the summer laboratories in England and on the continent were visited. Special attention was given to the equipment and conduct of those for the preparation of vaccine lymph in view of the recent act of the Legislature of this State authorizing the establishment of such a laboratory by the State Board of Health.

Surgery.—During the year there were but few changes in the method of teaching. The third-year class in small sections stayed for an hour after the lectures in Surgery at the School, and had demonstrated to them the specimens in the Warren Museum.

The following is the list of publication of members of the Division of Surgery during the year:—

Dr. E. H. BRADFORD.

Congenital dislocation of the hip; causes of relapse.

Arthritis deformans.

Treatment of lateral curvature.

Shoe deformities.

(All published in *Transactions of American Orthopedic Association.*)

Dr. M. H. RICHARDSON.

The contributions of surgery to internal medicine. *Transactions of American Surgical Association*, Vol. XXI.

On the surgical treatment of the diseases of the biliary passages. *Journal of the Maritime Medical Association*.

A few remarks concerning the surgery of the biliary passages. *Cleveland Medical Journal*.

Indications for extirpation of the gall-bladder and technique of the operation. *Medical News*, New York.

Dr. H. H. A. BEACH.

Enlarged third lobe of prostate gland; suprapubic exploration; removal of third lobe and three calculi. *Boston Medical and Surgical Journal*, March 19, 1903.

Cancer of pylorus; obstruction; gastroenterostomy with McGraw ligature. *Boston Medical and Surgical Journal*, March 19, 1903.

Biliary fistula following cholecystotomy; choledochotomy; recovery. *Boston Medical and Surgical Journal*, March 19, 1903.

Cholelithiasis; choledochotomy; recovery. *Boston Medical and Surgical Journal*, March 19, 1903.

Prolapse of rectum; rectopexy. *Boston Medical and Surgical Journal*, March 19, 1903.

Hydronephrosis; operation; cure. *Boston Medical and Surgical Journal*, March 19, 1903.

Intestinal obstruction following operation for appendicitis; operation; recovery. *Boston Medical and Surgical Journal*, July 23, 1903.

Needle in knee-joint; joint opened and needle removed. *Boston Medical and Surgical Journal*, July 23, 1903.

Adhesion of fallopian tube to appendix; removal. *Boston Medical and Surgical Journal*, July 23, 1903.

Abdominal injury without external signs. *Boston Medical and Surgical Journal*, July 23, 1903.

Dr. GEORGE W. GAY.

The diagnosis and treatment of hemorrhoids. *International Clinics*, Vol. II, Series 13, Philadelphia.

Obscure fractures in the vicinity of joints. *Transactions of New Hampshire Medical Society*, 1903.

Dr. GEORGE H. MONKS.

The normal appendix; its length, its mesentery, and its position or direction, as observed in six hundred and fifty-six autopsies. (With Dr. J. B. BLAKE.) *Boston Medical and Surgical Journal*, November 27, 1902.

A case of acute pancreatitis and necrosis of fat tissue. (With Dr. DAVID D. SCANNELL.) *Boston Medical and Surgical Journal*, January 22, 1903.

Dr. F. S. WATSON.

Some observations upon the value of the "Phloridzin Test" for estimating the functional capacity of the kidneys; renal sufficiency. (With Dr. W. T. BAILEY.) *Boston Medical and Surgical Journal*, December 4, 1902.

Subparietal injuries of the kidney. *Boston Medical and Surgical Journal*, July 9 and July 16, 1903.

Dr. R. W. LOVETT.

Round shoulders and faulty attitude; a method of observation and record, with conclusions as to treatment. *Boston Medical and Surgical Journal*.

The occurrence of painful affections of the feet among trained nurses. *American Medicine*.

Clinical observations on backache. *New York Medical Journal*.

Flat foot in infants and children. *Journal of the American Medical Association*.

The element of torsion in lateral curvature of the spine; its place in the cause and treatment. *Boston Medical and Surgical Journal*.

A frame for the application of plaster of paris jackets in Pott's Disease. *American Medicine*.

Rotation in lateral curvature. *New York Medical Journal*.

The diagnosis of hip disease; an analysis of ninety-five cases. *Boston Medical and Surgical Journal*.

Dr. JOHN C. MUNRO.

External urethrotomy from the standpoint of the general surgeon. *Journal of the American Medical Association*, October 25, 1902.

A case of death from the status lymphaticus following cholecystotomy. *Transactions New York Academy of Medicine*, December, 1902.

Surgical treatment of hemorrhagic pachymeningitis. *Medical and Surgical Reports, Boston City Hospital*, Series XIII, and *Chicago Medical Record*, October and December, 1902.

The clinical diagnosis of typhoid perforation. *Boston Medical and Surgical Journal*, February 5, 1903.

The surgical treatment of gastric ulcer. *Boston Medical and Surgical Journal*, August 20, 1903.

The significance of albumin and casts in surgical patients. *Medical News*, September 12, 1903, and *Transactions American Surgical Association*, 1903.

Dr. E. G. BRACKETT.

The school in its effect upon the health of girls. *Boston Medical and Surgical Journal*, April 10, 1902.

Dr. PAUL THORNDIKE.

The present status of the surgery of the prostate gland. *Transactions Massachusetts Medical Society*, and *Boston Medical and Surgical Journal*, August 13, 1903.

Dr. JAMES G. MUMFORD.

The teaching of clinical surgery at Harvard University. *Medical Alumni Quarterly*, 1902.

John Collins Warren. *Bulletin Johns Hopkins Hospital*, 1903.

A narrative of medicine in America. J. B. Lippincott Co., 1903.

Present problems. *Lakeside Hospital Report*, 1903.

Clinical talks on minor surgery. Old Corner Book Store, 1903.

Operation for repair of the pelvic floor. *American Journal of Medical Sciences*, 1903.

Dr. JOHN BAPST BLAKE.

Observations upon long distance runners. Edited with Dr. RALPH LARRABEE.

A preliminary report of five cases of decapsulation of the kidney. Read before the Suffolk District Medical Society, April, 1903.

Dr. F. B. LUND.

Congenital anomalies of the phalanges, with report of cases studied by skiagraphy. *Boston City Hospital Report*, Thirteenth Series.

Six cases of rupture of the intestine, with four recoveries. (With E. H. NICHOLS, M.D., and J. T. BOTTOMLEY, M.D.) *Boston City Hospital Report*, Thirteenth Series, December 1, 1902.

A case of interscapulo-thoracic amputation for sarcoma of the brachial plexus. *Boston Medical and Surgical Journal*, April 16, 1903.

The value of enterostomy in selected cases of peritonitis. *Journal of the American Medical Association*, July 11, 1903.

Dr. J. T. BOTTOMLEY.

A case of acute, multiple, non-traumatic osteomyelitis occurring in an adult. *Journal of the American Medical Association*, August, 1903.

Dr. E. A. CODMAN.

The use of the X-ray in Surgery. *Bulletin Johns Hopkins Hospital*, May, 1903.

Dr. R. B. GREENOUGH.

The surgical treatment of cirrhosis of the liver. *American Journal of Medical Sciences*, December, 1902.

Dr. HUGH CABOT.

A case of suture of the ureter; recovery without leakage. *Boston Medical and Surgical Journal*, December 11, 1902.

Dr. H. L. BURRELL.

Surgical Tuberculosis. *Transactions Massachusetts Medical Society*, June 10, 1903.

The teaching of surgery. *Boston Medical and Surgical Journal*, October 23 and October 30, 1902.

Dr. F. J. COTTON.

Brachial paralysis, post-narcotic. (With Dr. S. WALLER.) *Boston Medical and Surgical Journal*, May 7, 1903.

Requirements for school desks. *Annual Regulations of School-house Commissioners*, Appendix IX.

Dr. E. H. NICHOLS.

Acute infectious osteomyelitis; its pathology and treatment. (Now in press. To appear as a monograph in *The Journal of the American Medical Association*.)

Under the direction of the Committee in charge of research work in surgery, composed of Drs. Burrell, Nichols, and Greenough, there were published in *The Journal of Medical Research* the following contributions to surgical research, forming the first of a series of bulletins of original work in Surgery:—

Hodgkin's Disease; a pathological analysis of nine cases. (With two plates.) Dr. C. C. SIMMONS.

Chronic cystic mastitis; a study of thirty cases. (With three plates.) Drs. R. B. GREENOUGH and H. F. HARTWELL.

Bacteriology of the fibrinous exudate in septic peritonitis. (With two plates.) Dr. T. J. MANAHAN.

Transplantation of arteries. (With one plate.) Dr. J. C. HUBBARD.

The effect of X-rays on living tissue. (With three plates.) Dr. S. W. ALLEN.

Hygiene.—The research on the toxic substances of respired air, begun by Dr. Walker and continued by Dr. Strong, was brought to a close during the year.

Drs. Harrington and Walker investigated the germicidal action of alcohol in various concentrations, using cultures of pathogenic organisms of varying degrees of resistance as tests. They also studied the reaction time of corrosive sublimate, in solutions such as are commonly used, against pathogenic organisms.

Dr. Harrington investigated the action of sodium sulphite in the system. This work formed the basis of a paper which was presented by him at the Eleventh International Congress of Hygiene and Demography, at Brussels, to which meeting he went as a delegate from the United States Government, and also from the Harvard Medical School.

During the year the following publications were made:—

Practical Hygiene. Second edition, revised and enlarged. By Dr. CHARLES HARRINGTON. Lea Brothers & Company, pp. 760.

Progress in Hygiene. By Dr. CHARLES HARRINGTON. *Progressive Medicine*, Vol. IV, pp. 38.

Antidotes. By Dr. CHARLES HARRINGTON. *Wood's Reference Handbook of the Medical Sciences*.

Poisons. By Dr. CHARLES HARRINGTON. *Wood's Reference Handbook of the Medical Sciences*.

The composition and alcoholic content of certain proprietary foods for the sick. By Dr. CHARLES HARRINGTON. *The Boston Medical and Surgical Journal*, March 12, 1903.

The reaction time of corrosive sublimate in different dilutions against various species of bacteria. By Drs. CHARLES HARRINGTON and D. H. WALKER. *The Boston Medical and Surgical Journal*, April 23, 1903.

The germicidal action of alcohol. By Drs. CHARLES HARRINGTON and D. H. WALKER. *The Boston Medical and Surgical Journal*, May 21, 1903.

The physical chemistry of milk. By Dr. L. J. HENDERSON. *The Journal of Medical Research*, July, 1903.

Neurology.—The most important change in the work of the department during the year was the thorough use of the "case system" of teaching, *i. e.*, the supplementing of the examination of patients by the discussion of carefully described and systematically arranged cases, furnished the student in a printed form, for study outside the class-room. No regular text-book was used, but the students were advised as to what books should be consulted for reference. Certain defects showed themselves in the system as adopted, and in the next year a few preliminary lectures will be given, and fewer cases will be given out for study. Nevertheless, in spite of criticisms, which were sought and obtained, and in spite of the fact that some of the students did not feel that they were being taught systematically enough, the examination paper, which was an especially difficult one, was dealt with better than any of its predecessors.

Dermatology.—The only change in the department during the year was the substituting of clinical section work for didactic lectures during the second half of the third year. The result was very gratifying.

Museum.—In view of the approaching change of buildings, there has been no attempt at any extensive rearrangement, and, on account of the crowded condition, only the most valuable specimens have been preserved. The regular cataloguing and routine work has been carried on as usual.

The specimens have been extensively used both by the instructors in their regular lectures, and by others, for the illustration of medical works.

The number of lantern slides has been very largely increased the past year, especially in the department of pathology and orthopedics.

The Scholarships and Fellowships were awarded as follows:—

Barringer Scholarship, No. 1,	C. L. Overlander, Ph.B.,	2d Class.
Isaac Sweetser Scholarship,	W. C. Woodward, B.L.,	3d "
Claudius M. Jones "	B. E. Sibley, A.B.	2d "
Hilton "	G. S. Amsden, A.B.,	2d "
" "	E. H. Place,	3d "
Barringer " No. 2,	L. G. Beeley, A.B.,	3d "
Alfred Hosmer Linder Scholarship,	L. S. Beals, A.B.,	3d "
Eveleth "	S. J. Beach, A.B.,	2d "
" "	H. B. C. Riemer,	3d "
" "	L. Arkin, S.B.,	3d "
Edward Wigglesworth "	C. H. Staples, A.B.,	3d "
Charles B. Porter "	R. S. Stearns, S.B.,	2d "
Faculty "	A. W. Foss, A.B.,	3d "
" "	G. T. Spicer, A.M.,	4th "
" "	J. Stanton, Ph.G.,	4th "
" "	W. L. Sargent, A.B.,	4th "
John Thomson Taylor "	D. Robinson, A.B.,	2d "
Lucius F. Billings "	C. W. Eveleth, S.B.,	4th "
Orlando W. Doe "	W. L. Barnes, A.B.,	3d "
Charles Pratt Strong "	T. Ordway, A.M.,	2d "
David Williams Cheever "	A. H. Crosbie (H.C.Senior),	1st "
Lewis and Harriet Hayden " (½)	M. L. Barker, A.B.,	1st "
" " " " " (½)	J. G. Trimble, Jr., A.B.,	1st "
John Foster Fund (½)	H. W. Godfrey, A.B.,	1st "
" " " (½)	C. H. Holt, A.B.,	1st "
Cotting Gift,	H. L. Smith,	4th "

The George Cheyne Shattuck Fellowship was awarded Elliott P. Joslin, M.D., for work on acid intoxication in diabetic coma.

The John Ware Fellowship was awarded Joseph H. Pratt, M.D., for clinical study of blood pressure in various pathological conditions.

The Charles Eliot Ware Fellowship was awarded Henry A. Christian, M.D., for work on neuroglia tissue and ependymal epithelium in teratoid tumors, and the fats of pneumonic exudations.

No essay was submitted for the William H. Thorndike prize.

The Boylston Medical prize was awarded R. M. Yerkes, Ph.D., for an essay entitled "An experimental study of the reactions of the medusa gonionema to photic and electric stimuli."

The statistics of the School will be found in the following tables:—

COURSES OF INSTRUCTION, 1902-03.

FIRST YEAR.		Students examined.
Anatomy. — Professor T. DWIGHT, Associate Professor DEXTER, Demonstrator WARREN, Assistant YOUNG, Assistant WHITESIDE, Assistant MOSHER, Assistant DAVIS, Assistant ALLEN, Assistant BUTLER, Assistant MARCY, Assistant STETSON.		82
Physiology. — Professor H. P. BOWDITCH, Associate Professor W. T. PORTER, Asst. Professor CANNON, Austin Teaching Fellow MAXWELL.		99
Histology and Embryology. — Professor MINOT, Assistant DONOGHUE, Assistant LARRABEE, Assistant EMERSON, Instructor BREMER, Instructor LEWIS, Austin Teaching Fellow TYZZER.		75
Physiological and Pathological Chemistry. — Professor WOOD, Associate Professor HILLS, Instructor HEWES, Instructor EMERSON, Assistant ALSBERG.		73
SECOND YEAR.		
Bacteriology. — Professor ERNST, Assistant DENNY, Assistant PAGE, Assistant PERRY, Assistant ROBEY, Assistant EVERETT, Assistant SANBORN, Austin Teaching Fellow FROTHINGHAM.		77
Advanced Anatomy. — Professor T. DWIGHT, Associate Professor DEXTER.		89
Pathology and Pathological Anatomy. — Professor COUNCILMAN, Associate Professor MALLORY, Instructor TAYLOR, Instructor WRIGHT, Instructor CHRISTIAN, Instructor NICHOLS, Assistant MAGRATH, Assistant WILLIAMS.		73
Comparative Pathology. — Professor T. SMITH, Instructor CHRISTIAN, Assistant MAGRATH, Assistant WILLIAMS.		
Clinical Chemistry. — Professor WOOD, Instructor HEWES, Assistant CONNOLLY, Assistant MUSGRAVE.		77
Therapeutics. — Asst. Professor PFAFF, Assistant JORDAN, Assistant VEJUX-TYRODE.		106
Theory and Practice. — Instructor CUTLER, Assistant STONE, Assistant JOSLIN, Assistant WHITE, Assistant BADGER, Assistant PRATT.		
Clinical Medicine. — Asst. Professor SEARS, Instructor VICKERY, Assistant BARTOL, Assistant PRESCOTT, Assistant J. M. JACKSON, Assistant AMES, Assistant CABOT.		
Surgery. — Asst. Professor BURRELL, Instructor C. A. PORTER, Instructor NICHOLS, Assistant LOTHROP.		
THIRD YEAR.		
Theory and Practice of Medicine. — Professor FITZ, Instructor CUTLER, Assistant STONE, Assistant JOSLIN, Assistant WHITE, Assistant BADGER, Assistant PRATT.		143
Obstetrics. — Professor W. L. RICHARDSON, Asst. Professor C. M. GREEN, Instructor HIGGINS, Assistant NEWELL, Assistant SWAIN, Assistant FRIEDMAN.		143
Clinical Obstetrics. — Professor W. L. RICHARDSON, Asst. Professor C. M. GREEN, Instructor HIGGINS, Assistant NEWELL, Assistant SWAIN, Assistant FRIEDMAN.		

COURSES OF INSTRUCTION.

187

Dermatology. — Asst. Professor BOWEN.	147
Diseases of the Nervous System. — Professor PUTNAM, Assistant WATERMAN.	147
Pediatrics. — Professor ROTCH, Asst. Professor MCCOLLOM, Instructor BUCKINGHAM, Assistant CRAIGIN, Instructor MORSE, Assistant LADD.	140
Psychiatry. — Instructor COWLES.	142
Gynaecology. — Asst. Professor DAVENPORT, Instructor HAVEN, Assistant STORER, Assistant NEWELL, Assistant YOUNG.	146
Surgery and Clinical Surgery. — Professor WARREN, Professor C. B. PORTER, Associate Professor M. H. RICHARDSON, Asst. Professor BURRELL, Lecturer GAY, Instructor THORNDIKE, Instructor MUNRO, Instructor NICHOLS, Assistant BLAKE, Lecturer BEACH, Lecturer ELLIOT, Instructor MONKS, Assistant LUND, Assistant BOTTOMLEY, Assistant SCUDDER, Assistant MUMFORD, Assistant BREWSTER, Assistant CODMAN, Assistant BALCH.	140
Clinical Medicine. — Professor SHATTUCK, Asst. Professor SEARS, Instructor WITHINGTON, Instructor VICKERY, Instructor JACKSON.	

FOURTH YEAR.

Clinical Surgery. — Professor C. B. PORTER, Associate Professor M. H. RICHARDSON, Asst. Professor BURRELL, Instructor MONKS, Assistant LUND, Assistant SCUDDER, Assistant MUMFORD, Assistant COBB, Assistant BOTTOMLEY, Instructor MUNRO, Assistant LOTHROP, Instructor THORNDIKE, Instructor C. A. PORTER, Assistant GREENOUGH.	114
Clinical Medicine. — Professor SHATTUCK, Asst. Professor SEARS, Asst. Professor MCCOLLOM, Assistant R. C. CABOT, Instructor WITHINGTON, Instructor H. JACKSON.	187
Ophthalmology. — Professor WADSWORTH, Instructor STANDISH, Assistant JACK, Assistant CLAP, Assistant QUACKENBOSCH, Assistant SPALDING.	139
Otolaryngology. — Professor BLAKE, Professor J. O. GREEN, Assistant HAMMOND.	134
Laryngology. — Instructor DEBLOIS, Instructor FARLOW, Instructor COOLIDGE.	137
Legal Medicine. — Professor DRAPER, Instructor E. W. DWIGHT.	134
Syphilis. — Instructor POST, Assistant C. M. SMITH.	136
Orthopedics. — Associate Professor BRADFORD, Assistant LOVETT, Assistant GOLDTHWAIT, Assistant BRACKETT, Assistant DANE.	99
Hygiene. — Asst. Professor HARRINGTON.	141
Psychiatry. — Instructor COWLES, Instructor LANE.	
Genito-Urinary Surgery. — Lecturer WATSON, Instructor THORNDIKE.	
Municipal Sanitation. — Lecturer DURGIN.	

Fourth Year Electives.

Ophthalmology. — Professor WADSWORTH.	7
Otolaryngology. — Professor BLAKE, Professor J. O. GREEN, Assistant HAMMOND, Assistant CROCKETT.	4
Dermatology. — Asst. Professor BOWEN, Instructor C. J. WHITE.	49
Diseases of the Nervous System. — Professor PUTNAM, Instructor WALTON, Instructor KNAPP.	7

Gynaecology. — Asst. Professor C. M. GREEN.	25
Operative Obstetrics. — Asst. Professor C. M. GREEN, Instructor HIGGINS, Assistant NEWELL, Assistant SWAIN, Assistant FRIEDMAN.	64
Operative Surgery. — Professor C. B. PORTER, Assistant MIXTER, Instructor MUNRO, Instructor MONKS, Assistant SCUDDER, Assistant MUMFORD, Assistant BLAKE, Assistant LUND, Instructor C. A. PORTER, Assistant BREWSTER, Assistant COBB, Assistant H. CABOT, Assistant LOTHROP, Assistant BOTTOMLEY, Assistant CODMAN, Assistant GOULD, Assistant FAULKNER.	78
Bacteriology. — Professor ERNST, Assistant DENNY, Assistant PERRY, Assistant PAGE, Assistant ROBEY.	1
Orthopedics. — Associate Professor BRADFORD.	25
Clinical Microscopy. — Curator WHITNEY.	12
Clinical Chemistry. — Professor WOOD, Instructor HEWES, Instructor EMERSON.	2
Anatomy. — Associate Professor DEXTER.	19
Embryology. — Professor MINOT, Instructor LEWIS.	2
Physiological Chemistry. — Asst. Professor PFAFF.	2
Comparative Etiology of Infectious Diseases. — Professor T. SMITH.	4

TABLE I.—GENERAL STATISTICS OF THE SCHOOL.

New matriculants . . . 83	{	Graduates in Medicine 0
	{	Undergraduates 83

The whole number of students in attendance : —

In courses for graduates	41
Fourth Class	101
Third Class	127
Second Class	115
First Class	89
Total	473

Applicants for Degree 185

Rejected 21

Graduated 114

Of the 114 students who received the degree of Doctor of Medicine, 21 received the degree *cum laude*.

	SUMMER COURSES.					GRADUATE COURSES.				
	1899.	1900.	1901.	1902.	1903.	1898-99.	1899-00.	1900-01.	1901-02.	1902-03.
Courses taken .	142	167	151	145	188	134	63	40	30	57
Students	116	149	126	130	148	50	46	29	25	41
Receipts	\$3895	\$4695	\$4275	\$4400	\$5280	\$2861.25	\$1465	\$1065	\$700	\$1400

TABLE II. — FINAL EXAMINATIONS, CONTINUED.

		THIRD CLASS.										FOURTH CLASS.																							
		Theory and Practice.		Surgery.		Obstetrics.		Pediatrics.		Dermatology.		Gynecology.		Neurology.		Psychiatry.		Clinical Medicine.		Clinical Surgery.		Ophthalmology.		Otolaryngology.		Laryngology.		Legal Medicine.		Syphilis.		Orthopedics.		Hygiene.	
		\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%
1899	Passed	118	119	110	110	93	116	116	118	118	118	118	105	118	105	117	119	119	117	119	119	104	120	120	120	120	120	123	123	123	123	100	100	90	90
	Rejected	8	8	6	21	16	34	21	15	7	5	7	9	9	7	18	14	16	12	7	6	20	2	2	0	0	0	0	1	1	0	0	38	29	
	Total	126	127	116	131	142	137	137	125	127	125	125	127	123	123	123	123	133	136	126	126	124	122	122	120	120	123	123	124	124	100	100	128	128	
1900	Passed	118	116	116	116	129	114	120	119	120	120	120	115	119	115	115	115	115	115	117	117	110	115	115	114	114	119	119	121	121	83	83	113	113	
	Rejected	7	5	4	12	9	13	10	7	0	0	0	5	7	8	6	9	7	2	1	16	1	1	1	5	4	0	0	1	1	0	0	18	13	
	Total	125	121	120	128	139	127	130	120	126	120	120	123	123	123	123	124	124	124	119	126	126	116	116	116	119	119	122	122	83	83	131	131		
1901	Passed	132	126	129	129	136	109	128	125	129	128	125	129	129	129	129	129	111	120	120	108	114	114	114	117	117	121	121	120	120	71	71	116	116	
	Rejected	8	5	4	9	6	30	22	7	5	7	5	9	9	6	10	8	2	2	10	8	0	0	0	0	0	0	0	0	0	0	0	12	9	
	Total	140	131	138	138	142	139	150	135	137	135	137	133	133	133	131	121	122	122	118	118	118	114	114	117	117	121	121	120	120	71	71	128	128	
1902	Passed	111	110	111	111	120	113	117	116	117	117	116	116	116	116	131	129	129	129	129	121	131	131	131	137	137	132	132	135	135	98	98	124	124	
	Rejected	10	5	4	11	9	19	14	6	5	7	5	11	8	6	6	4	0	0	18	13	3	2	2	0	0	2	2	1	1	1	1	17	12	
	Total	121	115	122	122	129	132	123	123	123	123	123	123	127	127	137	137	137	137	129	139	139	134	134	137	137	134	136	136	99	99	141	141		
1903	Passed	137	132	121	121	128	131	130	139	136	136	139	136	139	136	100	114	114	114	112	112	113	113	115	115	116	116	118	118	92	92	111	111		
	Rejected	6	8	6	22	15	16	11	8	6	11	8	6	4	8	7	0	0	6	6	0	6	2	2	3	3	3	3	0	0	0	0	12	10	
	Total	143	140	143	143	143	147	141	146	147	146	147	142	142	142	117	114	114	114	118	118	118	115	115	118	118	119	119	118	92	92	123	123		

TABLE II. — FINAL EXAMINATIONS. CONTINUED.

	Ophthalmology.		Otolaryngology.		Gynecology.	Dermatology.	Neurology.	Operative Obstetrics.	Operative Surgery.	Bacteriology.	Orthopedics.	Clinical Microscopy.	Clinical Chemistry.	Anatomy.	Physiology.	Embryology.	Hygiene.	Physiology.	Chemistry.	Comparative Pathology of Infectious Diseases.	Histology of the Nervous System.
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
1899																					
Passed	6	7	1	16	57	5	9	38	88	18	25	4	7	10		1	3	3	0	2	
Rejected	1	14	0	5	5	8	35	7	6	2	1	0	0	0		0	0	0	0	0	
Total	7	7	1	17	62	13	44	45	94	20	26	4	7	10		1	3	3	0	2	
1900																					
Passed	3	4	0	11	54	5	5	59	81	6	40	5	4	12	1	1		2	0	4	2
Rejected	0	0	0	0	5	5	1	0	7	0	3	0	0	2	0	0		0	0	0	0
Total	3	4	0	11	59	10	6	59	88	6	43	5	4	14	1	1		2	0	4	2
1901																					
Passed	3	3	0	33	32	13	2	56	71	10	50	10	3	20	2	2	1	1	0	2	2
Rejected	0	0	0	0	4	11	13	1	3	2	0	0	0	0	0	1	0	0	0	0	0
Total	3	3	0	33	36	24	15	57	74	12	50	10	3	20	2	3	1	1	0	2	2
1902																					
Passed	6	1	0	14	64	6	7	87	79	5	37	7	3	14		1	5	3	0	2	1
Rejected	0	0	0	1	7	6	2	11	2	0	0	1	0	0		1	0	0	0	0	0
Total	6	1	0	15	71	12	9	98	81	5	37	8	3	14		2	5	3	0	2	1
1903																					
Passed	7	4	0	25	47	4	7	64	78	1	25	12	2	19		2		2	0	4	4
Rejected	0	0	0	0	2	4	0	0	0	0	0	0	0	0		0		0	0	0	0
Total	7	4	0	25	49	8	7	64	78	1	25	12	2	19		2		2	0	4	4

The number of new matriculants (83) showed a gain of seventeen over the previous year. The comparison of scholarship attained by the different classes since the requirement of a degree for admission has been in force proves the wisdom of the step taken, so far as the qualifications of the future graduate is concerned.

The increase in the number of men taking graduate courses was very marked, the receipts being double that of the previous year, and the number of graduates attending the courses showed an increase of sixty-four per cent.

The summer courses showed also a decided gain in the number of students and of the courses taken.

WILLIAM L. RICHARDSON, *Dean*.

THE DENTAL SCHOOL.

TO THE PRESIDENT OF THE UNIVERSITY :—

SIR,— As Dean of the Dental School I herewith submit the following report for the academic year 1902–03.

The number of students enrolled was 112, divided as follows :—

Third-year students	40
Second-year students	26
First-year students	44
Post-graduates	2
	112

There were thirty-three candidates for the degree, six of whom failed in final examinations, leaving a graduating class of twenty-seven, five of whom received the degree *cum laude*.

The courses of instruction were as follows :—

Anatomy.—Professor T. DWIGHT, Associate Professor DEXTER, Demonstrator WARREN, Assistants ALLEN, MOSHER, YOUNG, BUTLER, MARCY, WHITESIDE, DAVIS, STETSON. 424 hours.

Physiology.—Professor H. P. BOWDITCH, Associate Professor W. T. PORTER, Instructor CANNON. 348 hours.

Histology and Embryology.—Professor MINOT, Assistants EMERSON, DONOGHUE, LARRABEE, Instructors BREMER, LEWIS, Austin Teaching Fellow TYZZER. 252 hours.

Physiological, Pathological and Dental Chemistry.—Professor E. S. WOOD, Associate Professor HILLS, Assistants CONNOLLY, MUSGRAVE, ALSBERG, SMITH, Instructors HEWES, EMERSON. 308 hours.

Bacteriology.—Professor H. C. ERNST, Assistants PAGE, DENNY, ROBET, PERRY, EVERETT, JOHNSON, Austin Teaching Fellow FROTHINGHAM. 160 hours.

Materia Medica and Therapeutics.—Professor E. C. BRIGGS, 32 lectures; Assistant RODGERS, 32 recitations.

Dental Pathology.—Professor C. A. BRACKETT. 32 lectures.

Neurology.—Instructor E. W. TAYLOR. 4 lectures.

Crown and Bridge Work and Metallurgy.—Assistant Professor COOKE. 32 lectures.

Surgical Pathology and Surgery.—Professor WARREN, Assistant Professor BURRELL, Instructor MONKS. 18 lectures.

Mechanical Dentistry and Orthodontia.—Professor E. H. SMITH. 32 lectures.

Orthodontia.—Professor E. H. SMITH, 32 clinics; Assistant BAKER, 64 hours.

Mechanical Dentistry.—Clinical Instructor J. D. DICKINSON. 8 clinical lectures.

Mechanical Dentistry.—Clinical Lecturer STODDARD. 16 lectures and demonstrations.

- Mechanical Dentistry, laboratory, Juniors. — Demonstrator CROSS, Assistant Demonstrator CHASE. 544 hours.
- Mechanical Dentistry, laboratory, Seniors. — Demonstrator CROSS, Instructors HAYDEN, ELDBRED, BURNHAM, GRANT, CHUTE, PARSONS, J. W. DICKINSON. 496 hours.
- Operative Dentistry and Dental Jurisprudence. — Clinical Lecturer CLAPP, 12 lectures; Instructor STARRATT, clinical assistant.
- Operative Dentistry and Oral Surgery. — Professor THOMAS FILLEBROWN, 32 lectures.
- Operative Dentistry. — Assistant Professor POTTER. 32 lectures.
- Operative Dentistry. — Clinical Instructor WERNER. 13 lectures and demonstrations.
- Operative Dentistry, infirmary, Juniors. — Assistant Demonstrator D. W. DICKINSON, Instructors WENTWORTH, ESTABROOKS, NAYLOR, ELLIOTT.
- Operative Dentistry, infirmary, Seniors. — Demonstrator McMEEKIN, Instructors TART, EDDY, BLAISDELL, BRADLEY, HOLMES, PERKINS, PAUL, GRAY, FARRINGTON, HARDING. 624 hours.
- Mechanical Treatment of Fractured Jaws and Cleft Palates, and other Deformities. — Demonstrator CROSS. 15 lectures.
- Extracting and Anaesthesia (Demonstrations). — Instructors HART, SQUAREBRIGS. 160 afternoons.

The following tables show the work done in the infirmary and laboratory during the year: —

OPERATIVE DEPARTMENT.

Surgical clinics by Professor FILLEBROWN.

	Number of cases	
Necrosis	8	
Abscess	15	
Antrum disease	5	
Epulis	3	
Hare lip	3	
Cleft palate	7	
Re-implantation	1	
Impacted Lower Third Molars removed . . .	3	
Dislocation of Temporo-Maxillary Articulation	1	
United Fracture	2	

INFIRMARY.

No. of patients treated	7,895
“ “ “ for diseases of teeth and gums . . .	2,501
“ sets of teeth cleaned	1,107
“ operations	19,116
“ fillings — gold	2,937
“ “ amalgam	1,852
“ “ cement	1,482
“ “ gutta percha	3,293
“ porcelain inlays	15

MECHANICAL DENTISTRY.

SERVICE TO PATIENTS.

No. of sets of artificial teeth	279
“ “ “ “ repaired	118
“ appliances for fractured jaws	40
“ splints for cleft palate operations	2
“ obturators and appliances for cleft palates	11
“ artificial nose	1
“ plug for antrim	1

PRACTICE WORK.

No. of sets of artificial teeth	122
“ splints for fractured jaws	19
“ vulcanite plates repaired	14
“ “ “	127

Under the direction of Professor SMITH : —

No. of cases of irregularity treated and corrected . . .	92
“ appliances	177
“ articulated models of regulating cases	134
“ regulating appliances	141

Under the direction of Asst. Professor COOKE and Dr. ELDERED : —

SERVICE TO PATIENTS.

No. of crowns and caps	154
“ “ “ repaired	29
“ pieces of bridge work	35
“ “ “ repaired	12
“ porcelain inlays	14
“ “ tips	1

PRACTICE WORK.

No. of crowns and caps	177
“ bridges	201
“ porcelain inlays	32
“ carved teeth models	32

On January 6, 1903, dental service was established, by request of the management, in the House of the Good Samaritan. The cost of equipment was met by the hospital authorities. The service was given by the School. Dr. M. F. Rogers was appointed as instructor to superintend the work, and senior students in the School were detailed, in sections of two each week, to go to the hospital and assist him in the care of the teeth of the patients. This service has been most satisfactory both to the hospital and the School. It has pro-

vided free dental service to these deformed and crippled children and been an excellent training school for our students in the handling of children when undergoing dental operations.

The number of patients treated in this service was . . .	54
The number of operations was	75

During the summer vacation the infirmary was kept open and 633 persons received dental treatment. Thirteen of these were cases of fractured jaws. The Emergency Corps gave treatment to 115 persons at their homes.

A change was made during the year in the chemistry course. Heretofore the course for dental students was the same as that given to the medical students, and consisted of lectures and laboratory work daily for sixteen weeks in physiological and pathological chemistry. The new scheme provided for dental chemistry during the greater part of the last eight weeks, in place of much of the work previously required in pathological chemistry. In this course special attention was given to the study of saliva and its influence in causing caries of the teeth, and also to the study of serumal calculi and its influence in causing Pyorrhea Alveolaris. This course also provided for research work for the more advanced students, and several availed themselves of the opportunity thus offered.

An N_2O and O apparatus was purchased during the year and has proved to be a valuable addition to the department of Operative Dentistry.

The School is much indebted to Mrs. George G. Crocker for a picture of the late Dr. Nathan C. Keep, who was the first Dean of the School, having held the office from 1868 to 1872.

As a result of strict economy and going without many things that the School really needed, the deficit for the last year has been reduced one-half from that of the preceding year.

The rapid increase of the number of persons who are really too poor even to pay the cost of medicine and materials, makes it quite impossible to maintain the infirmary properly without endowment.

EUGENE H. SMITH, *Dean.*

BUSSEY INSTITUTION.

TO THE PRESIDENT OF THE UNIVERSITY: —

SIR, — I respectfully submit the following report on the Bussey Institution for the year 1902-03.

The whole number of students in attendance was thirty-seven, of whom twenty-nine, registered at the Bussey Institution, were students proper of Agriculture and Horticulture, devoted to professional studies in these branches, while eight were members of the school of Landscape Architecture at Cambridge, striving to gain some knowledge of horticulture by attending certain courses of instruction on this subject as given at the Bussey Institution.

The degree of Bachelor of Agricultural Science was conferred upon six candidates at Commencement.

Instruction was given throughout the year in Agriculture (including Cattle Breeding, Cattle Feeding, and Dairying), Horticulture, Agricultural Natural History, Mathematics and Surveying, Agricultural Chemistry and Chemical Analysis, by Messrs. Hersey, Watson, Morse, Shaughnessy, Dillingham, Robinette, and Storer.

One Bulletin of the Bussey Institution entitled "On the Occurrence of Mannan in the Wood of some kinds of Trees," by F. H. Storer, was published.

The crowded condition of the school building still calls urgently for relief.

F. H. STORER, *Dean*.

THE LIBRARY.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,—I beg to submit this my sixth annual report on the Library, covering the year 1902–03.

In the five reports which I have already had the honor to present, I have done my best to make clear the nature of the difficulties under which the work of the Library is now carried on, and the necessity of an enlargement in building and in staff which every year becomes more urgent. In presenting a sixth report, in which the same pressing need must necessarily claim the first place, I cannot do better than quote from the report of the Visiting Committee of the Overseers, submitted last May by Mr. Putnam, the Librarian of Congress, and I do this in order that the Committee's admirable and forceful statement of the Library's condition may by publication with your own annual report reach the general body of the alumni.

“Twenty years ago the library building was but barely adequate, even for the housing of the material: its facilities for administration and for use were imperfect. Since that date the collection has more than doubled in size, — its constituency, in the undergraduate department alone, has doubled in number; and the methods of instruction have tended towards increased direct use of books by the individual student. But the provisions in space and facilities have remained practically the same. The alterations in Gore Hall in the summer of 1895 modified certain space to new uses, but they added not a foot to the space itself. Large masses of material that should be active in use have been crowded off the shelves and relegated to mere storage in the cellar, or forced out of the building into inaccessible storage elsewhere. The administration is pinched into spaces in the aggregate less than a third of the size requisite for convenient and thorough work, and during certain seasons ill-ventilated; administrative processes which should be in close juxtaposition have had to be scattered in remote alcoves of the stacks themselves. From the ordering of books to the issue of books to the reader, there is not a single process which is not cramped for space and harassed in operation. The cataloguing is rendered unduly laborious by the want of shelving near at hand for the reference books which are its tools, and by the need of traversing public spaces in order to reach the large sections of the collection in Gore Hall; and imperfect from inability to consult the material in storage. The reclassification, the completion of which is essential to effectual use, the prompt completion of which is essential to the

economic placing of new accessions, has had to be suspended altogether. The public catalogues still occupy the narrow space directly opposite the main doorway, where the inquirer must consult them standing, jostled by applicants for books and amid the disturbance of the issue work. And the issue desk, which is also the main reference desk, has still but the dimensions and facilities suited to a village library. For the accommodation of the manuscripts, of the bound newspapers, of the maps, of the art folios,—or for the exhibit of material,—there is no such provision as even the smallest library now deems necessary.

"The main reading-room, contrived by the alterations in Gore Hall, seats but half the number of readers who should be expected to be making use of it at one time in a University of the size of Harvard, and provides for each reader desk space that is both too shallow and too narrow for convenient study; while the room as a whole, though fairly lighted, has the aspect of makeshift; it lacks the large spaces conducive to meditative study, and is barren of the architectural beauty and dignity which in a great library can exercise a practical influence for good. For seminar study, for which every new college library now provides as a matter of course, there is not merely no present provision, but no possibility of a provision within the present building.

"These conditions are urgent beyond description and beyond longer endurance. They impede necessary growth, discourage use, and stifle administration. They are not unique. They have in some degree been experienced by other academic, indeed by most active libraries, at some stage of their career. They are due to growth in the collections which is inevitable, and increase in use which is alike inevitable and creditable. But while in other institutions adequate remedies have been applied, at Harvard they have not been applied; and the conditions there to-day are, so far as your Committee is aware, without parallel in any academic library in this country."

We wait for relief. Relief, it is evident, cannot come from any funds at present possessed by the President and Fellows, and I have never urged the adoption of any partial or temporary measures at the expense of the Corporation, feeling sure that it is best to wait, even at great inconvenience, for the time when well considered and far reaching plans for a general reorganization can be made. In the meantime, we make the best use we can of the means we have, and we are thankful that we have books—the richest and most valuable collection of books that exists in this country. That the day will surely come when we shall have an amply equipped and generously endowed building in which to use them I have no doubt. May that long looked for day come speedily! As the best way of preparing for it, I would call attention to the method adopted by the Museum of Fine Arts in Boston, which has before it a problem not

unlike our own — the planning of a new building on a much larger scale and adapted to meet new demands. The heads of the several departments have been asked to report on the needs and the probable course of development of their respective departments, and at the same time a consulting architect has been appointed to advise in regard to the general character of new plans and the relation of one part to another. The questions connected with our new Library building have already been studied by the Committee appointed by the Corporation in December, 1901, which reported in March, 1902, and included in its report, beside the discussion of certain general questions of policy on which it had consulted members of the teaching staff, specific recommendations in regard to floor areas, shelving, seating capacity, rooms for special uses, etc. Further study of the subject is of course needed by the Library Council and the Library Staff, and an opportunity for suggestion and discussion must naturally be provided in the University Council, or by other means; but all such study and discussion will be more profitable if, as it is going on, we may have the services of a competent consulting architect, not for the purpose of making a final plan, but to advise in regard to certain preliminary questions, such as the practicability of retaining Gore Hall, or the possibility of adapting it to other uses (questions which only an architect can decide), and to embody in some concrete preliminary form the specifications presented by the Committee of 1901. We should then have something tangible upon which to work, and something which would appeal more directly to the generosity of possible benefactors. I hope the appointment by the Corporation in June of another special committee to advise it on certain fundamental questions is an indication that the Library's wants will be brought powerfully and persuasively before the graduates at an early day.

The need of additional endowment for administration is as urgent as the need of a new building. For five years the expenses of the Library have been held firmly down and not allowed to increase more than was absolutely necessary. The work to be done, however, has been rapidly growing, so that each year the staff becomes less adequate to deal with the work expected of it. With an enlargement of the building and the provision of new facilities for study, and with the enlargement of the staff required for current administration, for taking up again the work of re-classification, and for bringing up to date other work which has fallen behind, comes a large increase of expense. Funds which have been bequeathed to the Library for administration (not including purchase of books),

with funds assigned to this purpose by the Corporation, now yield an income of about \$29,000, and an additional \$17,000 has to be contributed by the general College account to make up the \$46,000 at present required for administration. It is highly desirable that the Library should be independent of the College financially, for it is the last few thousand dollars in its annual budget which are hardest for the College to supply, but are of most consequence in developing its activities. A million added to the endowment fund would doubtless make the Library thus independent of the College treasury for many years, and would be of enormous benefit both to the Library and to the College at large. I wish some generous lover of learning might be moved to make this ample provision for the Library on condition that the graduates of the College would unite in providing a building.

The possible separation of "live" and "dead" books — of books frequently in use and those seldom, if ever, consulted — a subject to which you called the attention of librarians a year ago in your address before the American Library Association, was one of the topics specially assigned for discussion at the last meeting of the Association, and references to the question are frequent in library reports and papers. That such a distinction is frequently desirable, and is often, in fact, more or less completely carried out, and that small libraries should relieve themselves in this way of the burden of carrying unprofitable books, is generally acknowledged. The point of most consequence, however, is the disposition of the "dead" books, — the way in which they are stored, and the freedom with which they can be had when wanted. I have tried to contribute to a clear understanding of the question by examining with some care the character of recent literary investigations made in this Library, in order to ascertain the conditions that seemed to be essential to the successful conduct of the investigation, and I summed up the results of my inquiry in a paper read before the American Library Association last July (*Library Journal*, August, 1903). The subjects of investigation were of the greatest variety, but whenever the student was endeavoring to follow out some line of inquiry not pursued before, to trace some connection hitherto undiscovered, or to collect material not already brought together (and the greater part of the work done by professors and students is of this kind), it was clear that personal access to a classified collection of all the books in one or more sections of the Library was required.

The question of division, therefore, becomes relatively unimportant, depending simply on special conditions of place and time.

The essentials to be preserved are three: *comprehensiveness*, so far as the individual library's resources extend; liberty of *personal access* to the books themselves on the part of advanced students; and *classification*, so that all the material of one kind can be found within a reasonable compass, and a serious waste of time be thus prevented. The saving of time is itself worth much, but more important is the fact that in many cases it would be practically impossible for the inquirer to learn from bibliographies or catalogue what books he needs, and to have them picked out and brought to him one by one. He must be able himself to glance over large numbers of books in certain fields, in order to light upon the particular facts or references he wants. The process is strictly comparable to a naturalist's search for specimens. He cannot tell beforehand precisely where he will find what he seeks; he only knows the general character of the surroundings in which he is likely to find what will reward his pains. Patient searching is required of the student of history or literature as of the student of nature, and such searching can be carried on to advantage in a library only if all its resources are arranged after some systematic order and are directly accessible to the inquirer.

Number 55 of the Bibliographical Contributions was issued early in the autumn. This is entitled "Descriptive and Historical Notes on the Library of Harvard University," and has been compiled by Mr. A. C. Potter, head of the ordering department. It is intended to give a general survey of the resources of the Library for the benefit of both our own students and scholars at a distance. It also presents interesting matter in regard to the history of the Library, such as a list of the more important gifts and bequests from 1638 to the present time, a list of the book funds and funds available for general purposes, a brief chronology of the Library, a list of the librarians, and a bibliography, containing a list of the official publications of the Library and of the more important publications relating to it. It has been printed at the expense of the Richard Manning Hodges Fund.

Capt. A. A. Folsom, of the Ancient and Honorable Artillery Company, has made a copy of a manuscript Orderly Book given to this Library in 1842. It was kept by Jeremiah Fogg, Adjutant of the Second New Hampshire regiment encamped on Winter Hill, Somerville, during the Siege of Boston, and covers the period from October 28, 1775, to January 12, 1776. This has been printed in successive numbers of the "Exeter News Letter," and is to be re-

printed in separate form. Permission to make this use of the manuscript was given on condition that twenty-five copies of the reprint should be placed at our disposal to send to other libraries.

The accessions to the libraries of the University for the year, and the present extent of each are shown in the following table:—

ACCESSIONS.	Volumes added.	Present extent in	
		Volumes.	Pamphlets.
Gore Hall (College Library)	16,977	415,928	280,000
Law School	8,392	75,877	7,006
Divinity School	594	33,236	8,850
Medical School	36	2,388	. .
Dental School	55	701	8,076
Bussey Institution	80	4,380	12,000
Museum of Zoölogy	3,624	38,082	31,723
Peabody Museum	157	3,017	2,813
Astronomical Observatory	390	10,759	18,634
Gray Herbarium	430	8,442	6,595
Arnold Arboretum	700	9,602	. .
Twenty-eight Special Reference Libraries . . .	2,331	37,243	. .
Total	33,766		
Deduct, transfers between Gore Hall and Department Libraries	506		
Total	33,260	639,655	375,697

Of the 16,977 volumes added to the Gore Hall collection, 7,731 came by purchase or exchange, 1,152 as the result of binding serial publications, and 736 by binding pamphlets separately, while the remainder, 7,358 volumes, were received by gift.

15,391 pamphlets have been received, 13,441 by gift, and 1,950 by purchase or exchange. 1,064 sheets of maps have been added to the map collection, which now numbers 21,256 sheets.

Dr. Malcolm Storer, the Curator of Coins, reports the addition of only 15 pieces to the numismatic collection. Of these, ten were bought and five given. Among those bought is the rare and interesting medal of Tristram Coffin and the silver medal of Prince Henry of Prussia by Brenner.

The total gifts to the College Library during the year 1902-03 and the previous five years have been as follows : —

GIFTS TO THE COLLEGE LIBRARY.	1897-98.	1898-99.	1899-00.	1900-01.	1901-02.	1902-03.
Volumes	2,646	7,096	11,360	4,749	4,648	7,358
Pamphlets	11,365	12,448	11,072	14,235	16,230	13,441
Totals	14,011	19,544	22,432	18,984	20,878	20,799

The year has been a remarkable one for the richness and variety of its gifts. Gifts in money for immediate use in specified directions have amounted to \$4,461.12, while the total number of volumes received has been 7,358, a number only twice exceeded in earlier years.

To Mr. John Drew, of New York, we are indebted for the gift of the valuable dramatic library of the late Robert W. Lowe, of London, the dramatic historian and bibliographer, — a library rich in biographies of English actors, early dramatic periodicals, and the earlier histories of the stage, in books and pamphlets about particular theatres, and in the controversial works relating to the English stage, especially in the eighteenth century. The collection also contained many plays by little known dramatists, which, as Professor Baker remarks, are in some cases worth preservation for their own sakes, in others for the light they throw on the customs of the time, and in others because they help to make clear why the drama sank as low as it did, even while the stage flourished, between 1775 and 1885. These books, with what has been brought together during the last five years by the systematic purchase of early editions of the plays of the seventeenth and eighteenth centuries, give us the foundation for a collection of original material indispensable to the historian of the drama and the stage, and I hope we may be able in time to build up the collection on all sides. A gift of \$300 a year for five years could be used to great advantage in this way, and would bring in a larger return now than it would ten years hence, since these books are rising in price.

Mr. James H. Hyde, who had bought the library left by Professor Bôcher, gave to this Library all Professor Bôcher's collections relating to Molière and Montaigne, specialties to which he had devoted himself through many years of assiduous collecting, and to these Mr. Hyde added all the early editions of the dramatists of Molière's time. The collection, numbering altogether about 2,500 volumes and

pamphlets, forms a fitting memorial of Professor Bôcher, and, thanks to Mr. Hyde's generosity, has found the permanent abiding-place which its former owner eagerly desired for it. A special catalogue of the Molière collection is being prepared at Mr. Hyde's expense and will be printed as one of the Library's Bibliographical Contributions.

From Assistant Professor Coolidge we have continued to receive abundant additions to our collections on the Ottoman Empire, Morocco, China, and Slavic countries, subjects in which he has long been specially interested. Among the books on the Ottoman Empire are a number of incunabula and other rare books, including a collection of thirty Spanish pamphlets of the early seventeenth century giving contemporary notices of Turkish affairs.

The Hon. George von L. Meyer, the American Ambassador to Italy, kindly placed in Mr. H. N. Gay's hands 500 lire (about \$100) to be spent for the Library on books on the Italian Risorgimento. Mr. Gay, who has been for some years a resident of Rome (but registered in our Graduate Department), and has a large historical library of his own, is specially familiar with the literature of modern Italian history and was able to lay out the money to the best advantage (sending us 286 volumes and 85 pamphlets). To this gift, supplemented by the gift of many pamphlets from Mr. Gay's own library, and to Mr. Gay's expert service in selection, we owe what is already beginning to be a notable collection on the Italy of the nineteenth century.

Mrs. Louis Bettmann, of Cincinnati, gave \$300 to be spent at the Librarian's discretion in memory of her son, Milton Bettmann, of the Class of 1897, who died soon after graduating from the Medical School. Mr. A. C. White, 1902, of New York, repeated his former gift of \$250 for Dante books, and the Dante Society added \$150 to its previous gifts for the same purpose. From Mr. Harold J. Coolidge comes a third annual gift of \$50 for books on China.

Mr. Edgar H. Wells, whose successful effort to collect subscriptions for the purchase of English literature of the eighteenth century was reported last year, has continued his interest in the subject, and we are indebted to him for an additional \$435 to be spent in the same field.

Professor J. H. Gardiner, who in conducting his courses on the history of the English Bible has had occasion to regret the withdrawal some years ago of the Livermore Bibles, has undertaken to strengthen our collection in this department, and has obtained from friends several hundred dollars, of which \$393 has already been spent for

early editions of the English Bible and other translations which are of interest in connection with it.

Mr. and Mrs. Ira Atkinson, of Wakefield, have given to the Library and to the library of the Harvard Union, the books which belonged to their son, Dr. Roger T. Atkinson, of the Class of 1894, a graduate of the Harvard Medical School and an Assistant Surgeon in the United States Navy. Dr. Atkinson had bought books freely and intelligently and evidently enjoyed owning them. The most valuable portion of his library naturally went to the Harvard Union, being already duplicated in the College Library, but 273 volumes were added to our shelves.

Professor Norton, as the literary executor of James Russell Lowell, has placed in the Library a large collection of the letters received by Mr. Lowell from his numerous correspondents and a number of manuscripts of articles contributed to the *North American Review* during his editorship.

From Mr. Edward A. Silsbee we received by bequest another interesting Shelley manuscript to be preserved beside the earlier and more valuable manuscript book given by Mr. Silsbee some years ago.

Books and pamphlets from the families of Mrs. James Greenleaf of Cambridge, Mr. W. S. Appleton of Boston, Professor Bôche and Mr. John D. Sargent of New York have added to the value of our collections in many different directions. Mr. Archer M. Huntington has sent us copies of all his facsimile reproductions of rare books in his great Spanish library. To many other friends, both old and new, too numerous to name individually, we are indebted for constant remembrance.

A few of the more notable works received by gift or purchase I mention in detail, in order that other libraries may note their existence here and so be able to refer to this Library students who require them.*

Devonshire Association for the Advancement of Science, Literature and Art. Report and transactions, 1862-1902. 34 vols.

Shropshire Archaeological and Natural History Society. Transactions, 1878-1902. 25 vols.

These two sets make the collection of English local historical societies accessible either in Boston or Cambridge nearly if not quite complete.

* It has for some years been our custom to note in our official catalogue rare or expensive works which can be found in other libraries, so far as the reports of other libraries make mention of them. It would be well if libraries called attention to such acquisitions oftener than they do, and made a practice of recording in their own catalogues what can be found in their neighbors' collections.

Société de l'histoire de Paris et de l'Ile de France. *Mémoires*, 1875–1901. 28 vols.; *Bulletin*, 1892–1901. 10 vols.

The first fourteen volumes of the *Mémoires* were received in the Riant library.

Faculté des Lettres de Bordeaux. *Annales*, 1879–94. Continued as *Revue des universités du Midi*, 1895–98. 20 vols.

Société scientifique de Bruxelles. *Annales*, 1877–1902. 26 vols.

Almanach de Gotha. Several early years from 1792 to 1812, making our set complete from 1792, with the exception of the years 1803 and 1814–16.

Bayreuther Blätter, Monatschrift des Bayreuther Patronatvereines, 1878–1902. 25 vols.

Das Handels-Museum, 1886–1902. 35 vols.

Ymer; tidskrift utgifven af Svenska sällskapet för antropologi och geografi, 1881–1902. 22 vols.

Acta Sanctae Sedis, 1865–1901. 34 vols.

Actes et documents relatifs à l'histoire de la régénération de la Roumanie, 1889–1901. Tome 1–9.

Brockhaus Encyclopaedia; the Russian edition, vols. 1–38 (in 75 vols.).

A distinct work from the German edition, and containing much special matter on Russian affairs.

Rohault de Fleury. *La Messe*. Etudes archéologiques sur ses monuments. 1883–89. 8 vols.

Salmeron. *Commentarii in evangelicam historiam*, etc. Coloniae Agrippinae. 1612–13. 16 vols. in 10° folio.

Sousa. *Historia genealogica da casa real portugueza desde a sua origem até o presente*. Lisboa. 1735–49. [With “*Provas*” and index.] 20 vols. 4°.

Bibles: —

Coverdale's New Testament of 1538. 2d edition.

The Genevan Bible of 1560. 1st edition.

The Bishops' Bible of 1572. The 2d folio.

The Rhemish New Testament of 1582. 1st edition.

The Rhemish New Testament of 1589, printed in London. With “the translation used in the Church of England, with a confutation of all such arguments,” etc., by W. Fulke.

The Douai Old Testament of 1609–10. 2 vols. 1st edition.

Luther's Bible (German) of 1539 [1535–38].

All the above Bibles were bought with the money collected for this purpose by Professor Gardiner.

Armstrong, Sir Walter. *Turner*. 1902. Folio.

Baessler, Arthur. *Ancient Peruvian Art*. 1902–03. 4 vols. Folio.

Foster, J. J. *The Stuarts*. 1902. 2 vols. Folio. From Mrs. Bettmann.

Hauser y Menet. *Tapices de la Corona de España*. 1903. 2 vols. 135 photographic plates reproducing the ancient tapestries which have been collected from century to century by the Spanish kings.

Herrade de Landsberg. *Hortus deliciarum*. 1901. Folio. 90 plates. Reproductions of the illustrations in a famous religious manuscript of the 12th century.

Meyerbeer. *Les Huguenots*. Orchestra score. 4 vols.

National Portrait Gallery. London. [Photographs of all the portraits.] Edited by Lionel Cust. 2 vols. Folio.

Aristophanes. Facsimile of the Codex Venetus Marcianus 474. Published by the Archaeological Institute of America. 1902. Folio.

Addison. *The campaign*. 1705. 1st edition. Also the edition of 1710.

— *The drummer; or, The haunted house*. 1716. 1st edition. Also 2d edition, 1722.

— *Rosamund, an opera*. 1707. 1st edition.

Chaucer. *Works*. London. 1687. Folio.

Fielding. *Amelia*. 1752. 4 vols.

— *History of Tom Jones*. 1749. 6 vols. 1st edition.

Shakespeare. Reproduction in facsimile of the first folio. With introduction by Sidney Lee. 1902.

Chap-books. A collection of 83 chap-books printed in London and Belfast, 1763–69, bound in 3 vols.

This collection was made by James Boswell, who writes on the fly-leaf of the first volume that, having retained an affection for such publications from early days, he went to the printing office in Bow Church Yard and bought this collection and had it bound up with the title of “Curious Productions.”

Bought with interest from the Child Memorial Fund.

Chap-books. Another collection numbering 103 pieces, dating from 1770 to 1790, collected by Joseph Ritson, the antiquarian, and bound in 4 volumes.

Doni, Ant. Fran. *I mondi*. Vinegia. 1552–53. 2 vols. Many of the illustrations relate to passages of the *Divina Commedia*.

Paulus Florentinus. *Quadragesimale de reditu peccatoris ad Deum*. 1479. 1st edition. Prized because of its frequent citations of Dante and Petrarch.

These two the gift of Mr. A. C. White.

Hoe, Robert. Catalogue of [part of his library]; books by English authors who lived before 1700. 1903. Vols. 1 and 2.

A collection of pamphlets once owned by George Pitt, Baron Rivers, relating to English political affairs from 1760 to 1800, and formed during that period. 193 volumes and pamphlets.

Bought at auction with a portion of Mrs. Bettmann's gift.

SPECIAL REFERENCE LIBRARIES.

The present extent of these libraries is as follows :—

SPECIAL REFERENCE LIBRARIES.	Perma- nent.	On Deposit.	Totals.
1. Chemical Lab. <i>Boylston Hall</i>	621	971	1,592
2. Physical Lab. <i>Jefferson Phys. Lab.</i>	29	369	398
3. Botanical Lab. <i>University Museum</i>	586	124	710
4. Geological Lab. <i>Do.</i>	120	..	120
5. Mineralogical Lab. <i>Do.</i>	500	230	730
6. Phys. Geography Lab. <i>Do.</i>	352	176	528
7. Zoölogical Lab. <i>Do.</i>	277	..	277
8. Classics. <i>Harvard Hall 3</i>	3,677	147	3,824
9. History. <i>Harvard Hall R. R.</i>	2,289	17	2,306
10. United States History. <i>Harvard Hall R. R.</i> . .	881	8	889
11. Political Economy. <i>Do.</i> . .	1,235	1	1,236
12. Social Questions. <i>Do.</i> . .	867	6	873
13. Child Memorial (English). <i>Warren House</i> . .	4,857	90	4,447
14. Lowell Memorial (Romance). <i>Do.</i> . .	1,479	6	1,485
15. German. <i>Do.</i> . .	1,251	..	1,251
16. French. <i>Do.</i> . .	2,480	..	2,480
17. Sanskrit. <i>Do.</i> . .	918	28	941
18. Semitic. <i>Semitic Museum</i>	1,220	..	1,220
19. Mathematics. <i>Sever 22</i>	449	80	529
20. Mining and Metallurgy. <i>Rotch Laboratory</i> . .	41	17	58
21. Engineering. <i>Pierce Hall</i>	6,049	519	6,568
22. Music. <i>Holden Chapel</i>	376	..	376
23. Philosophy (Psychol. Lab.). <i>Dane Hall</i> . . .	603	41	644
24. Education. <i>Lawrence Hall</i>	4,576	..	4,576
25. Fine Arts (incl. Gray and Randall Coll.). <i>Fogg Museum</i>	870	..	870
26. Architecture. <i>Robinson Hall</i>	916	13	929
27. Preachers' Library. <i>Wadsworth House</i>	94	..	94
28. The Study. <i>Phillips Brooks House</i>	59	..	59
29. Social Service Committee. <i>Phillips Brooks House</i>	71	..	71
Totals	37,243	2,838	40,081

The reading-room for History, Economics, and Social Questions in Harvard Hall is seriously crowded, and better provision should be made as soon as possible. At an expense of about \$800 the upper floor of Massachusetts Hall could be fitted over and would make an admirable reading-room for these large elementary courses in history and economics, the students in which courses use this reading-room almost exclusively. These courses are taken for the year just

beginning (1903-04) by 2,986 men. A room with only 104 chairs, and crowded at that, is manifestly inadequate.

The largest additions have been in the libraries in German and Education, 714 volumes in one case and 382 in the other. The German library is being increased by a part of the Schlesinger bequest assigned to this use by the Corporation, and the Education library by means of special subscriptions made for this purpose and by gifts from publishers.

USE OF BOOKS IN THE COLLEGE LIBRARY.

The following table shows the use of books at Gore Hall in 1902-03 as compared with previous years:—

USE OF BOOKS.	1896-97.	1897-98.	1898-99.	1899-00.	1900-01.	1901-02.	1902-03.
1. Books lent	59,611	61,272	63,005	63,712	63,673	58,443	63,183
2. Used in the building . (Recorded use only.)	22,965	27,017	25,595	23,715	24,180	22,583	24,924
Totals	82,576	88,289	88,600	87,427	87,853	81,026	88,107
3. Over-night use of Har- vard Hall Reading- room :	9,288	11,938	12,046	13,460	13,566	13,594	13,164

The decline in 1901-02 in number of books lent, for which I found it difficult last year to assign a sufficient cause, I am now inclined to attribute to errors in the keeping of the account, the delivery desk having been served during a part of the year by a new attendant who was replaced by another after a few months' trial. It is true, nevertheless, as I pointed out in my last report, that loans from the College Library have a tendency to diminish with the growth and use of department and special reference libraries, with the increase and improvement of club libraries in general, and with more free access to the shelves in the College Library itself.

Of the constant use of the reserved books in the reading-room, and of the collections of reference books, periodicals, and United States documents, freely accessible to all, no record is possible.

The extent of these open collections and their growth is shown in the table on the opposite page.

The number of bound periodicals keeps about the same because the shelf room for them is limited, and as the collection receives its necessary yearly increase, one set after another has to be removed

OPEN COLLECTIONS.	1898-99.	1899-00.	1900-01.	1901-02.	1902-03.
Bound Periodicals	3,275	3,275	3,140	3,210	3,266
Reference Books	4,142	4,224	4,235	4,393	4,471
Reserved Books	8,344	10,134	10,557	10,141	10,398
U. S. Documents	3,664	3,887	4,698	4,389	4,523
Total	19,425	21,520	22,630	22,133	22,658

to the stack. The number of United States documents has diminished for the same reason.

The books shelved in the reading-room, together with those in the various special reference libraries in Harvard Hall, Warren House, and elsewhere, amount altogether to about 63,000 volumes to which direct access can be had by all students to whom they are of value. In addition the library of the Harvard Union now offers to its members over 6,000 books, mainly literature, biography, history, travel and sport.

Cards of admission to different sections of the book-stack continue to be given, on recommendation of an instructor, to all advanced students who need to go directly to the shelves for purposes of investigation in connection with their work. Such students have the same facilities for the examination and study of all the resources of the Library, in their chosen departments, that the officers of instruction enjoy. The use of these cards of admission to the book-stack is shown in the following table:—

ADMISSION TO THE BOOK-STACK.	1896-96.	1896-97.	1897-98.	1898-99.	1899-00.	1900-01.	1901-02.	1902-03.
History	66	54	51	78	112	81	90	118
Science	4	11	33	43	30	36	37	45
Art and Archaeology (including Music)	11	18	34	38	33	33	55	46
Literature	63	64	90	90	85	74	80	125
Classics	41	41	52	60	70	58	70	73
Philosophy	6	4	11	19	19	22	27	31
Theology	1	1	3	5	1	1	14	2
Economics and Sociology	12	4	9	12	13	13	16	33
Education	1	5	2	8	4	7	4	25
Geography . . . . .	..	8	14	2	3	9	15	6
Publ. of Learned Societies . . .	..	..	..	..	..	16	8	7
Total	205	210	299	355	370	350	416	511
Times of use	4,601	4,381	5,750	5,826	6,898	6,067	5,551	6,244

The increase in this use during the past year is to be regretted, since the tables which can be occupied are few and are needed by officers of the University as well as by students, and I have had to call the attention of the Faculty to the fact that any further increase is inadvisable. I have also posted in the stack notices as follows: "Students who have access to the Stack are reminded that the tables here, being few in number, must not be used for protracted study or writing. Such work should be done in the Reading-room."

The number of individuals admitted was 366, not 511, because the same person often receives permission to use different parts of the book-stack.

In the course of the year the temporary use of the Library has been granted to 165 persons not connected with the University, who have come to Cambridge for purposes of study. As in other years, frequent applications for the loan of books have been received from other libraries, especially college libraries, and from scholars in distant parts of the country, and the Library has sent away 997 volumes in response to these requests.

The Sunday use of the reading-room is shown in the following table. The room is open, to readers only, every Sunday in term-time from one to half-past five in the afternoon.

SUNDAY USE.	1896-96.	1896-97.	1897-98.	1898-99.	1899-00.	1900-01.	1901-02.	1902-03.
Sundays open	24	35	35	35	35	35	36	35
Users	2,359	5,010	4,635	5,093	4,846	5,471	4,909	5,073
Average	98	143	132	145	138	156	136	144
Highest No.	140	227	297	260	236	226	225	227

Since last May we have allowed reserved books to be taken from the reading-room Saturday afternoon or evening, to be kept over Sunday, on condition that they be returned on Monday morning at nine o'clock. This seems to work well and satisfies in part the wants of those for whose benefit we were asked last year to open the Library Sunday evening, that is to say, those who want to work on Sunday and prefer to work in the evening rather than in the afternoon. It withdraws a number of useful books, it is true, from the reading-room on Sunday afternoon, but as the principal reason for opening the room on Sunday afternoons is to provide for recreation rather than for work, no serious objection can be made on this ground. About a hundred volumes are taken out every Saturday.

EXCHANGES.

Mr. Tillinghast, the Assistant Librarian, has taken direct charge of the exchange of publications with other universities and institutions, and has tried to put this department of the Library's work on a more systematic and satisfactory basis. The only publication, however, which the Library itself controls is its own series of Bibliographical Contributions. The publications issued by other departments of the University are published under such varying conditions that a uniform system of exchange seems to be at present impossible. The great institutions connected with the University, like the Museum of Comparative Zoölogy and the Astronomical Observatory, bear the expense of their own publications, distribute them in their own name, and naturally claim anything received in exchange as their own; but in a few cases they transmit publications of a general nature so received to the College Library. The departments of the Faculty of Arts and Sciences, Classical, Modern Language, Indo-Iranian, Historical, Economic, etc., also publish series of papers. In some cases these are sold by a commercial house, in others by the College; some are supported by a special fund insufficient for the full expense, others by a grant from the College treasury, others are on a purely commercial basis; but each is managed by a committee of the department, and it is impossible for the Library to use them as freely and consistently in arranging exchanges with other institutions as would be desirable. If a more uniform system of publication under the management of the Publication Office of the University is ever introduced, it may then be possible to put the whole business of exchanges into the care of an Exchange Bureau connected either with that Office or with the Library, and to authorize it to send out publications in the name of the University and to distribute equitably to the different departments what it receives in return. At the same time it is not to be expected that any system would result in a perfect balance of give and take. The first object of a learned institution or of a university with regard to its publications should be to place them where they will be of service; what it receives in return is an incidental advantage. We have tried, especially in arranging exchanges with other universities, to make the best use of what we have, and we have tried to send to each university, so far as possible, the kind of publication we receive from it,—to maintain, that is to say, some equality of kind but not of amount in our exchanges. The amount received commonly exceeds the amount we can send, but I am the less troubled at this

because we often have the opportunity to favor our correspondents by lending them books which they do not own. At present a regular exchange of publications has been established with the following American and foreign universities, the receipts being mainly dissertations, and, in a few cases, series of philological or historical papers. Medical dissertations received in this way are transmitted to the Medical School, and law dissertations, when of a technical nature, to the Law School.

American Universities.

Cornell University.	University of Kansas.
Johns Hopkins University.	University of Nebraska.
Leland Stanford Junior University.	University of Pennsylvania.
McGill University.	University of Toronto.
Princeton University.	University of Virginia.
University of California.	University of Wisconsin.
University of Chicago.	Yale University.

Foreign Universities.

Berlin.	Heidelberg.	Paris.
Bonn.	Jena.	Rennes.
Breslau.	Kiel.	Rostock.
Christiania.	Königsberg.	St. Petersburg.
Erlangen.	Leipzig.	Strasburg.
Freiburg.	Lille.	Tübingen.
Giessen.	Lund.	Upsala.
Göttingen.	Lyons.	Utrecht.
Grenoble.	Marburg.	Würzburg.
Halle.	Munster.	

The number of dissertations received from each university varies from 10 to 160.

SHELF DEPARTMENT.

Mr. Frank Carney, who has charge of the current work of the shelf department, reports 15,913 volumes permanently located in the stack during the year, 12,367 added to classes previously arranged, and 3,546 in sections newly classified, making 310,909 volumes so placed of the entire Gore Hall collection.

The newly classified sections are the following : —

	Volumes.
Africa : sections covering the history, description, etc., of Abyssinia, Algeria, Tunis, Sahara, Tripoli. (These, with Morocco reported last year, complete Northern Africa, with the exception of Egypt.)	280
Theatre	1,346
Molière.	1,531
Sumner Rarities	320
Bibles	69
	<hr/> 3,546

With the present staff and under our crowded conditions no substantial advance can be made in re-classification; but the receipt of many gifts relating to Northern Africa made it desirable to bring together what we already had, so that permanent numbers could be assigned. Mr. Drew's gift of the Lowe collection on the theatre and Mr. Hyde's gift of the Molière collection in like manner induced us to collect what we already had on the history of the stage, and to make a new special arrangement for Molière. The "Sumner rarities" form the choicer portion of the library of Senator Sumner bequeathed by him to the College. Years ago many of them were exposed in glass cases where visitors could see them, but there has long been no opportunity for the exhibition of rare books, and this collection of highly interesting volumes has been packed away in locked cupboards out of sight. The books have lately been transferred to shelves in my office, where behind glass doors they can at least be seen and more easily examined. They have been arranged in a suitable order, and in addition to the carefully made alphabetical catalogue printed as Bibliographical Contribution number 6, in 1879, I have had a rough index prepared by which the more noted bindings, the autographs, autograph manuscripts, book-plates, and other marks of ownership can be quickly found. At least one hundred of the volumes are interesting on account of their former owners; such are those which once belonged to Lorenzo de Medici, Leonardo Aretino, the Doge Foscarini, the inquisitor Torquemada, Montaigne, Montesquieu, Racine and Voltaire, Colbert and Talleyrand, Louis XIV, XVI, and XVIII, Madame de Pompadour, and Napoleon, Anne Boleyn, Queen Elizabeth, and Charles II, Bunyan, Evelyn, Drummond of Hawthornden, Ben Jonson, Congreve, Dryden, Milton, Pope, Swift, Walpole, Gay, Gray, Burke, Wordsworth, Byron, and Watts, Melancthon, Holbein, and Rubens.

A few representative and important editions of the Bible were brought together for the benefit of Professor Gardiner's course, and numbered in such a way that the whole collection of Bibles can be incorporated later without re-numbering these.

Mr. Carney reports that in classifying pamphlets on the shelves, he is more and more inclined to treat them with the same care as bound volumes, placing them so far as possible with the precise subject of which they treat, instead of collecting them in boxes under general heads. Single pamphlets, when not of enough importance to be bound, are put in a stout manila envelope which takes its place like a volume on the shelf; second and third pamphlets on the same subject are put into the same envelope. As more appear they are

transferred to a thin pamphlet box, then to a larger box, and finally the collection is bound when it has reached a suitable size. The resulting volumes are accordingly homogeneous in character.

Mr. Carney also calls attention to the fact that our method of shelving rare books is unsatisfactory. These books are now protected by being placed in small locked closets which have been built at frequent intervals as needed against the ends of the book-rows in the stack. In each closet are to be found the volumes which would naturally belong on the shelves in that vicinity, an arrangement that was expected to prove convenient. But in practice the system is not satisfactory. The books are subjected to unnecessary wear when asked for in the delivery room and handed out over the counter to be used in the reading-room, while if a reader who is working in the stack wants one of these books, he must go down to the delivery room and find an attendant, who gets a key, returns with him, and unlocks the closet; but the closet should not be left unlocked, and the same operation may have to be repeated indefinitely. The books could be guarded more efficiently, and used more safely, and readers be more conveniently served, if all these rarities which require special care should be brought together into a separate room suitably furnished, where the books would be used on the spot and under surveillance. This, however, is an improvement which must wait till we have a new library. No change is possible under present conditions.

During the summer, in order to give us a little more free space, about 5,500 volumes were moved to the basement of Robinson Hall, where shelving had already been built for another purpose. These, with the medical books sent last year to the Medical Library in Boston, and the newspapers in the basement of Perkins Hall, make about 12,000 volumes which we have had to turn out of the present library building.

The crowded condition of the shelves is also shown by the fact that we have been obliged to put double rows on the shelves in over fifty places; the reserved books when they come back to the stack from the reading-room at the end of the season find themselves crowded out from their old shelves by newcomers which have appeared during their absence; and 2,600 shelves have had to be shifted in the course of the year in order to gain a few inches of room here and there, so that new books may be added. This work of shifting, done from time to time, has required the equivalent of about thirty-five days' labor.

The changing of shelf-marks on the catalogue cards occasioned by re-classification of books on the shelves, was in arrears at the begin-

ning of the year, but is fairly well up to date at its close. The work has been done by employing extra helpers. What remains of this work is, in great part, for articles catalogued years ago from periodicals and proceedings of learned societies. The cards for these bear the old marks of these sets, which cause annoying delays and errors when used in calling for the volumes. The work is troublesome and cannot be rapidly done, but it must be taken up again and finished as soon as possible.

The loss of 102 volumes during the year is reported, 50 from the stack, 37 from the reading-room, and 15 from the new books exposed on open shelves in the delivery room. On the other hand, 45 volumes missing at the last examination have been found. Our net loss for the last twenty years has been an average of 47 volumes a year. Less time was given to the current examination of the shelves, and the ground was only covered completely once without the shelf-lists and once as usual with the shelf-lists. In these two examinations 504 volumes were found on the wrong shelves and 1,971 volumes out of order on their proper shelves — not a bad result considering the number of persons who have direct access to the shelves.


CATALOGUE DEPARTMENT.

Mr. Currier, in charge of the catalogue department, presents the following facts and figures in regard to the work of that department.

CATALOGUE WORK.	1898-99.	1899-00.	1900-01.	1901-02.	1902-03.
Titles catalogued for College Library :					
Full and complete work	6,584	6,539	6,727	9,226	8,517
Continuations, analytical entries, etc.	2,525	3,037	5,958	4,263	4,450
Incomplete work	3,167	3,818	11,484	2,936	3,373
Total	12,276	13,389	24,169	16,425	16,340
Titles for Dept. and Special Libraries	2,087	2,378	3,361	6,594	3,846
Total titles catalogued	14,363	15,767	27,530	23,019	20,186
Cards added to Catalogue :					
Printed cards —					
College Printing Office	18,226	16,736	16,857	16,555	18,135
Library of Congress . . . . .	. . . .	. . . .	. . . .	2,700	5,440
A. L. A. Publishing Board . . . .	. . . .	2,616	6,849	3,709	4,076
Total	18,226	19,352	23,706	22,964	27,651
Written cards	4,769	6,703	6,597	8,455	6,728
Total	22,995	26,055	30,303	31,419	34,379

The work has fallen a little behind that of the previous year, owing to the loss of two experienced cataloguers and the substitution of untrained assistants in their place. This work requires so much attention to detail and to precedent, in order to attain a reasonable degree of uniformity, that changes in the personnel of the staff are peculiarly disadvantageous. The total compares more favorably with last year's total than appears at first sight, for it should be noted that at the end of this year there were awaiting revision (and so failed to be counted) some 200 more titles than were waiting at the close of last year, and that last year the titles catalogued for the departments included about 3,000 catalogued for the Education Library in summary fashion by extra help.

The table shows that we have increased the use of catalogue cards received from the Library of Congress, so that about 16 per cent. of all the cards added to our catalogue are from this source. The proportion of printed cards from our own printing office remains about the same, while the proportion of written cards fell last year from 27 to 19.6 per cent. Five years ago 79 per cent. of the cards added to the catalogue were from the College printing office and 21 per cent. were written; last year about 53 per cent. came from the College office, 28 per cent. from the Library of Congress and the American Library Association Publishing Board combined, and 19 per cent. were written. The expense of the cards received from the Library of Congress averages about $1\frac{1}{2}$ cents each, far less than the cost of cards written by hand or printed in our own office. The cards received from the American Library Association Publishing Board cost about $\frac{1}{2}$ of a cent apiece, but a considerable number of those received are not used, so that the net cost to the Library is about the same as for the Library of Congress cards. The supply of cards received from the Library of Congress is remarkably prompt, but naturally differs according to the character of the titles ordered. When we can order by serial number, *i. e.*, with knowledge that the book has been already received and catalogued by the Library of Congress, we receive over 96 per cent. of the cards ordered within a week. For American copyright books ordered by title, *i. e.*, before the Library of Congress has had time to receive, catalogue, and publish the titles, 72 per cent. of the cards come within two weeks, but 7 per cent. of such orders we finally have to catalogue ourselves. Ordering for English and foreign books gives much more uncertain results, and long delays in receiving cards are not infrequent, but the saving in expense over printing our own cards is so great that we are content to wait in some cases eight or ten weeks, making a



temporary record of the book in the meantime and putting it into circulation.

An increase of the staff being impossible at present, we are still unable to keep up with the continually increasing stream of accessions. A part of the books received have, therefore, to be recorded in a temporary and incomplete form, the number of titles this year so recorded being 3,373. This method of treating the less important books has now been in operation some years. The work has been done in such a way that these books can be taken up again without difficulty at any time when we are able, but the number is becoming formidable and the final cataloguing will some day be a serious burden. Mr. Currier estimates that, including books lately received and now in process of cataloguing, books received in recent years and recorded on the official catalogue only, certain special collections, such as the Riant mss. and the Judeo-German and Slovak collections, bound volumes of pamphlets, and some sets of printed cards for articles in long series (not yet inserted in the catalogue), we have on hand at the close of the year about 33,870 titles uncatalogued or incompletely catalogued. I see no hope of even making a beginning on this work until the staff can be enlarged, and that cannot be done until we have larger and more convenient rooms to work in and larger means for the expenses of administration. As it is, the efficiency of the staff is impaired by the conditions under which the work is done, its members being scattered, and by the diminishing shelf-room on which a constantly increasing collection of necessary reference books has to be kept.

ORDERING DEPARTMENT AND FINANCIAL CONDITION.

The following table shows the income of our book funds, receipts from other sources for the purchase of books, and expenditure for books during the last six years. It will be seen that for the last three years our expenditure on account of book funds has exceeded the income from the funds by several hundred dollars, with the result that our free balance of \$5,176 carried over August 1, 1900, has been reduced by almost two thousand dollars, to \$3,197. This smaller balance and a decline of about five hundred dollars in the income itself makes it necessary to adjust our appropriations for books in the several departments to a more economical basis.

INCOME AND EXPENDITURE.	1897-98.	1898-99.	1899-00.	1900-01.	1901-02.	1902-03.
From book funds, —						
Balance from previous year .	\$2,303	\$737	\$5,028	\$5,176	\$4,547	\$4,021
Income of the year	13,010	18,301	18,510	19,279	19,944	19,450
Total available	15,313	19,038	23,538	24,455	24,491	23,471
Spent for books	14,576	14,010	18,362	19,908	20,470	20,274
Balance to next year	737	5,028	5,176	4,547	4,021	3,197
Special gifts, sales, etc. —						
Balance from previous year .	1,176	839	2,940	936	1,932	2,276
Received during the year . .	506	3,906	5,137	6,115	3,411	4,461
Total available	1,682	4,745	8,077	7,051	5,343	6,737
Spent for books	843	1,805	7,141	5,119	3,067	4,902
Balance to next year	839	2,940	936	1,932	2,276	1,835
Total spent for books, —						
College Library	\$15,419	\$15,815	\$25,503	\$25,027	\$23,537	\$25,176
Department Libraries (books ordered through Coll. Lib.)	5,322	3,869	4,748	4,464	7,245	7,389
Total	\$20,741	\$19,684	\$30,251	\$29,511	\$30,782	\$32,565

The work of the ordering department, in charge of Mr. Potter, is summed up in the following table, which gives the figures of the last three years and the averages of two previous five-year periods.

WORK OF ORDERING DEPARTMENT.	1890-95. Average.	1896-1900. Average.	1900-01.	1901-02.	1902-03.
New orders, —					
Total received and examined . . .	5,132	7,327	10,021	10,716	13,566
Already owned or ordered	1,193	1,725	2,596	2,826	4,921
Forwarded	3,800	5,036	6,782	6,696	8,477
Estimate of cost, —					
For the College Library	\$9,079	\$10,145	\$14,759	\$14,590	\$14,982
For Departments	2,902	3,223	2,510	4,956	4,621
Total estimated cost	11,981	13,368	17,269	19,546	19,603
Shipments received from abroad . .	28	33	52	69	76
†No. of vols. bought for College Lib.	4,416	5,736	7,061	7,400	7,731
‡Total gifts examined and passed on	16,050	16,455	18,984	20,878	20,799

† Excluding volumes formed by binding periodicals and pamphlets.

‡ Including both volumes and pamphlets. See p. 204.

The increase in the number of orders forwarded without a corresponding increase in the estimated cost may be partly accidental, but is largely due to the fact that we have recently ordered more freely from booksellers' catalogues. In general, books may be bought cheaper in this way than when ordered outright; while in many cases the book advertised has been sold, so that our order is not filled. Both facts reduce the "estimate of cost" in proportion to the number of "orders forwarded." The rapid growth of the work and the prospect of still larger increase in the coming year has made it necessary to give Mr. Potter an additional assistant and a new typewriting machine. Mr. A. F. Crowley has accordingly been transferred from the Harvard Hall reading-room to the Gore Hall staff and will give most of his time to Mr. Potter as stenographer and typewriter, beside helping Mr. Briggs in the reading-room when the work there presses. In this way I expect that the delays which occurred last year in sending out orders will be avoided. All work connected with the verification of orders requires great care and experience. The difficulties that beset it come from various sources, — incompleteness or error in the title as handed in, mistakes in our own catalogue, or in the current bibliographical records, uncertainty as to the proper entry of many books, and finally, the increasing number of incompletely catalogued books in the Library, books, that is to say, which have a single somewhat hastily made entry on the official catalogue, but no subject entries or reference cards to help the searcher when in doubt. In spite of these difficulties, the value of the duplicates unintentionally acquired represents only one-half of one per cent. of the expenditure for books, and a large part of this is recovered from the sale of the books.

THE ARCHIVES AND THE HARVARD COLLECTION.

Mr. P. H. Tufts has continued in charge of the Archives and the collection of printed matter relating to the University, but work on these two collections continues reduced to its lowest limits. We only try to keep in order the accessions currently received and prevent the work from falling seriously behind.

WILLIAM COOLIDGE LANE,
Librarian.

THE GRAY HERBARIUM.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,— During the academic year 1902–03 no changes have been made in the personnel of the Herbarium staff. The following persons, however, have been temporarily employed in connection with the work of the establishment: Mr. F. Schuyler Mathews as artist; Professor A. S. Hitchcock, of the United States Department of Agriculture, in special work upon the *Gramineae*; Mr. J. F. Collins, of Brown University, as assistant and artist; Miss E. W. Coolidge, in the sorting and distribution of *inserendae*; Mr. J. R. Johnston as botanical collector.

During the year many valuable collections of plants have been received, the following being the most important. By gift or in exchange: From the herbarium of the late Charles G. Loring, 855 plants, chiefly from the north shore of Lake Superior; from Dr. J. W. Blankinship, 642 plants of Montana and Wyoming; from Professor James Fowler, 718 plants of Ontario and New Brunswick; from Professor C. F. Millspaugh, of the Field Columbian Museum, 114 plants of Yucatan; from the New York Botanical Garden, 969 plants of Newfoundland and Nova Scotia, collected by Messrs. Howe and Lang; from Mr. W. H. Blanchard, 443 plants of eastern Vermont; from President E. Brainerd of Middlebury College, 237 plants, chiefly of western Vermont, critically selected to illustrate variation in *Viola* and certain other difficult genera; from Mr. John Donnell Smith, of Baltimore, 427 plants of Central America, in continuation of his valuable *exsiccatae* of Guatemala, etc.; from the Imperial Museum of Natural History in Vienna, 905 numbers of Reichenbach's classical *Exsiccatae Germanicae*; from the Botanic Garden at Sydney, 203 plants of Australia, largely of the genus *Eucalyptus*; from Mr. W. M. Canby of Wilmington, Delaware, 702 miscellaneous duplicates; from Dr. J. W. Haberer, 501 plants of central New York; from Professor L. H. Pammel, 267 plants of the Uinta and Wasatch Mountains; from Mr. E. F. Williams, 1,104 plants, chiefly from northern Maine and Quebec; from the Alstead School of Natural History, 176 plants of the middle Connecticut Valley; from Professor C. V. Piper, 226 plants of Washington State; from the

Royal Botanical Garden at Sibpur, 103 Indian orchids. By purchase: From Mr. A. A. Heller, 720 plants of California and 307 plants of Porto Rico; from Mr. C. L. Pollard, 325 plants of Cuba; from Mr. C. F. Baker, 1,027 plants of the Pacific Slope; from Professor S. M. Tracy, 956 plants of the Gulf States; from Mr. Theodor Holm, 200 plants of Scandinavia; from Mr. H. H. Smith, 2,367 plants of Colombia; from Mr. R. M. Harper, 470 plants of Georgia; from Mr. E. P. Sheldon, 257 plants of Oregon; from Messrs. Merrill and Wilcox, 728 plants of Wyoming; from Mr. A. Fredholm, 103 plants of Florida. Collected by the staff: By Mr. C. G. Pringle, 783 plants of Mexico, 112 plants of Cuba, and 600 plants of Vermont; by the Curator, aided by Mr. E. F. Williams, 425 plants of the White Mountains and western Maine.

The whole number of specimens received from all sources was 20,781. During the year 16,421 sheets of mounted specimens were added to the organized portion of the Gray Herbarium.

May 1st the Herbarium received, in the Robert C. Billings Fund of \$15,000, a substantial and much needed addition to its endowment. In this connection it may be noted that during the last ten years the permanent funds of the Herbarium have been raised from \$18,155.91 to \$89,618.17.* Although at the present low rate of interest this sum is still far from sufficient, its growth shows an increasing appreciation of the value of the Herbarium, and encourages the hope that the establishment may before many years be on a basis of permanent and adequate support. In the mean time it would be difficult to overstate the importance of the temporary aid, which for several years has been so readily and cordially given by the many contributors mentioned in the Treasurer's Report. This year these gifts for present use have aggregated \$7,550. Of this sum about \$3,500 was contributed to meet the absolutely necessary expenses for maintaining the Herbarium, and retaining the present staff. The remainder, however, was given for the following special purposes: The sum of \$500 to enable the Herbarium to send Mr. M. L. Fernald to Europe to examine and photograph type specimens connected with research and monographic work which is now being prosecuted at the Gray Herbarium; \$500 to send a botanical collecting expedition to Margarita Island; \$450 for the purchase of a block of eight steel herbarium cases; \$300 to aid Mr. Pringle's botanical exploration of Mexico; \$500 for the purchase of such European local floras as were not already represented in the Herbarium library; \$200 to

* This does not include the J. L. Russell Fund, the income of which is apportioned by the Corporation.

publish a much needed index (now in advanced preparation by Miss M. A. Day), to cover the first twenty-five Contributions from the Gray Herbarium.


Early in the year the Curator, with the collaboration of Professor W. G. Farlow, Dr. A. W. Evans, and several foreign specialists, published a Flora of the Galapagos Islands, including a bibliographic and synonymic enumeration of all plants known to occur in this biologically important archipelago. The paper also contains much statistical and tabular matter upon the distribution, relationship and probable origin of the different elements of the Galapageian flora.

During the summer of 1903 Mr. M. L. Fernald, in the interests of the Gray Herbarium, visited the herbaria of Geneva, Paris, London, Kew, and Oxford. With a wide and critical knowledge of American plants, Mr. Fernald has, during his studies in the foreign herbaria, been able to identify many obscure type specimens obtained by the early American explorers, and has done much to render clear the descriptions of Michaux, Pursh, and others, so important in the classification of American plants.

Mr. C. G. Pringle, collector for the Gray Herbarium, has continued with marked success his work in Mexico, and during the spring distributed one of the most valuable sets of plants ever prepared in America. The specimens were chiefly from the mountains of southern central Mexico, and nearly 25 per cent. of them represented species and varieties new to science. Mr. Pringle also made a trip to Cuba where, although chiefly occupied in some experiments in plant-breeding, he was able incidentally to obtain a small but excellent systematic collection. The difficult task of identifying the tropical plants secured by Mr. Pringle has been accomplished chiefly by Dr. J. M. Greenman.

During the summer of 1903 Mr. J. R. Johnston undertook for the Gray Herbarium a botanical collecting trip to Trinidad and Margarita Island, off the coast of Venezuela. Mr. Johnston was accompanied by an assistant and by Mr. A. F. Blakeslee, who went as collector for the Cryptogamic Herbarium. The members of the expedition were fortunate in escaping serious illness, and were able to bring back about 4,500 specimens, chiefly from Margarita Island. This collection is important to the Herbarium, both as showing the nature of an interesting flora and in furnishing valuable exchange material from a little explored region.

By way of summary, it may be said that the past year has been an unusually prosperous one for the Gray Herbarium. More plants have been purchased, more specimens added to the organized collec-



tion, more books and pamphlets acquired, more tropical exploration accomplished than in any previous year since accurate records have been kept. It has also been possible to employ more freely the time of skilled artists in plant illustration, and by sending out the *Exsiccatae Grayanae* (mentioned in the last report) to extend considerably the exchange relations of the Herbarium with foreign establishments. That the Herbarium has been able to end so successful a year free from debt is due chiefly to the efficiency and liberality of an energetic and devoted Visiting Committee.

The great need of the Herbarium is a new and fireproof building of ample size for the safe preservation of its scientifically invaluable but now dangerously congested collections. The floor cases, which it has been necessary to add from time to time, have now so largely filled the space in the herbarium building that the work of sorting and distributing specimens is carried on only with the greatest difficulty, and it is no longer possible to offer to the numerous visiting specialists adequate or well-lighted table space for comfortable work.

During the year the staff of the Herbarium has published twenty-six papers, of which the following from their scientific interest may be specially mentioned.

A new western *Camassia*. By J. M. GREENMAN. *Bot. Gaz.*, XXXIV, 307-308.

Contributions from the Gray Herbarium, n. s., No. xxiv. By B. L. ROBINSON (Flora of the Galapagos Islands). *Proc. Am. Acad.*, XXXVIII, 77-269, plates 1-3.

Variations of *Glaux* in America. By M. L. FERNALD. *Rhodora*, IV, 213-216.

Variations and distribution of American Cranberries. By M. L. FERNALD. *Rhodora*, IV, 231-237, plate 40.

Andromeda Polifolia and *A. glaucophylla*. By M. L. FERNALD. *Rhodora*, V, 67-70.

Chrysanthemum Leucanthemum and the American Whiteweed. By M. L. FERNALD. *Rhodora*, V, 177-181.

B. L. ROBINSON, *Curator*.

THE BOTANIC GARDEN.

TO THE PRESIDENT OF THE UNIVERSITY :—

SIR,—As Director of the Botanic Garden, I have the honor of presenting the following report for the academic year 1902–03.

Mr. Oakes Ames, Assistant Director, has been absent during the whole year. In every part of the establishment we have missed his advice and help. It is hoped that he may resume his duties early in the spring.

Mr. Robert Cameron, Superintendent, has given me the following notes, to which I respectfully call attention, as matter of record :—

During the autumn of 1902 many shrubs that had become too large for the natural order beds were taken up and removed to the shrubbery border on the Raymond street side of the Garden. They made good growth during the summer and seemed little the worse for their change.

In winter the greenhouses needed more care than usual, owing to the extra work required in burning soft coal. To burn soft coal satisfactorily our heating apparatus would have to be changed completely.

The drought of the early summer was severe on vegetation, but with the excellent new water system which the Garden now possesses we were able to keep all the plants in good condition.

The plants in the greenhouses are all doing well, but it seems a pity that almost every year in our palm-house we have to cut down and destroy large and valuable specimens that have grown too large for our small and inadequate palm-house. The herbaceous plants and shrubbery have made during the season satisfactory growth.

The dry weather alluded to by Mr. Cameron made us very anxious at first, but it was soon seen that the improvements of year before last, in our system of water-pipes through the Garden, enabled us to meet it effectively. The consumption of water during the time of peril was large, and greatly increased our expenses of the year.

The period of greatest anxiety was at the beginning of autumn, when the impossibility of obtaining anthracite coal declared itself. We were forced to use under our boilers poor sorts of bituminous coal. This coal was dealt out in small quantities, at high prices, and with the constant threat that even this supply might suddenly

cease. Therefore we provided the houses with a sufficient supply of petroleum as fuel, to tide over any such extreme emergency; fortunately, we were not compelled to use this dangerous and unsatisfactory agent. But in order to utilize the soft coal to any advantage, we had to employ an additional stoker for night work at the boilers, and we had to face constantly the danger of having the boilers, which had been constructed for hard coal, give out suddenly under soft coal. The many shifts to which we had to resort to carry the houses through the winter proved costly, and are likely to leave their bad traces for some time.

Plans for rearrangement, outlined in previous reports, have progressed as steadily as possible, and to the marked improvement of some orders and genera. The special plots of ground devoted to the plants mentioned by Virgil, by Shakespeare, and by the herbalists at the time of the founding of Harvard College, have continued to attract intelligent attention. During the coming spring we shall probably add two more special plots.

The new Memorial Greenhouses and Laboratory have again proved their usefulness. The economic and decorative sections of this range have been more than usually attractive. The Laboratory has been in nearly constant use. Its equipment has been sufficient to enable Mr. Plowman, Assistant in Botany, to carry on his interesting experiments in the ionization of soils, and certain relations of plants to magnetism. The results of some of these studies have been published. Researches by the Director on new methods for identifying fibres and fibrous structures have been carried on in this Laboratory. This investigation is connected with the illustrated catalogue of economic plant-products in our Museum, which has made fair progress during the year.

With the exception of the newer houses, all of our buildings have demanded heavy outlays for repairs. The replacement of these old wooden structures by buildings of steel and glass, with more convenient fittings for work, would save expense in many ways. But with our scanty means this desirable replacement cannot at present be undertaken. Under existing circumstances we must do the best we can with the decaying wooden houses and their patchwork of repairs. The increasing use of our houses by the students of Applied Botany in the Departments of Landscape Architecture and of Forestry, and also by the pupils in the Summer School, seems to demand that all of our greenhouses and hothouses should soon be placed on a more satisfactory basis for elementary experimental work in Physiological Botany.

One of the sources of constant expense at the Garden is the dilapidated fence around the grounds. This unsightly affair is now about fifty years old, and of late years has been held together only by most patient carpentry. The present fence was built by a special subscription, and cost about nine hundred dollars. At the current high prices of lumber and labor, a new fence would cost very much more, but this expenditure cannot be much longer safely deferred.

The Botanical Museum continues to grow in interest and importance. Considerable additions have been made to the economic collections, especially in the classes of fibres and foodstuffs. The difficult work of incorporating these in the general series, and of rearranging selected specimens for exhibition, study, and exchange, has gone on with little interruption. The Director again desires to express his appreciation of the valuable services rendered in this task by Mr. F. Leroy Sargent. Two anonymous donors have continued to defray the cost of this work, and of the allied work in the preparation of an illustrated catalogue of the collections. As fast as possible, older specimens are replaced by better ones which are at once installed in our cabinets.

The Ware Collection of glass models of plants in flower has received important additions during the year. Nearly all of the specimens have been transferred from the unsatisfactory pasteboard mounts to permanent plaques of plaster of paris. Numerous attempts have been made from time to time to make and use plaster tablets, but the results have not generally been such as to warrant their use. But, three years ago, a suggestion made by Dr. Libbey, of Boston, induced me to undertake anew the manufacture in a different way. The tablets which are now in our cases have a surprising hardness and perfect finish. In the opinion of persons thoroughly conversant with Museum technique, these newer tablets leave nothing to be desired as permanent mounts. During the incorporation of the later specimens, it was found expedient to rearrange the whole collection according to the latest accepted classification of flowering plants, and advantage was taken of the same opportunity to have the nomenclature re-examined. This work was entrusted to Dr. Jesse More Greenman, who finished the greater part of it early in the past summer. About three months' work still remains.

The Botanical Museum has received from Miss C. L. W. French, of Boston, an interesting annotated copy of Bigelow's *Florula Bostoniensis*, and also a collection of water-color paintings by Miss French and Mrs. Murdock. The exquisite drawings and paintings have given a great deal of pleasure to a large number of visitors.

The collection has been placed in a suitable case on the fourth floor.

A complete set of colored lithographs of the different varieties of sugar-cane has been properly framed and installed on the south wall of the Economic room.

The palaeontological collections have been under the direction of Dr. R. T. Jackson, who submits the following memoranda:—

Mr. J. A. Cushman has continued his work on the arrangement of the collection of fossil plants, and satisfactory progress has been attained. During the year the work was principally on the carboniferous material. The catalogued lots now number 7,326. These are in safe, permanent condition. A number of types and figured specimens have been found in addition to those mentioned in the report of last year.

The Harvard Experiment Station in Cuba, founded by Mr. Atkins, has proved to be serviceable from a scientific and practical point of view. Mr. Ames, the Assistant Director, Mr. Pringle, the Botanical Collector, and Dr. J. C. Willis, Director of the Royal Botanic Gardens, Peradeniya, Ceylon, visited the Station in late winter, and gave favorable reports of progress. Many suggestions by Dr. Willis, who has had large experience in such stations, are valuable, and will be acted on this year. Mr. Robert M. Grey, who had already been at the Station, engaged in the practical study of the sugar-cane, has been selected as resident superintendent, and has assumed charge.

It should be emphasized that this Station can be made very useful to the Cubans and to our own students. Mr. Atkins bears all expense connected with the undertaking. He expresses himself as well satisfied with the beginning which has been made.

In conclusion, the Director presents his sincere thanks to the members of the Overseers' Committee on the Botanic Garden for helpful suggestions and for substantial aid. He agrees with the Committee that the present is not a propitious time to undertake a general subscription for the increase of the invested funds of the Garden and Museum, and he is reluctantly obliged to rely on gifts by friends for its proper maintenance during the coming year.

GEORGE LINCOLN GOODALE, *Director.*

THE ARNOLD ARBORETUM.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR, — I have the honor to submit the following report on the progress and condition of the Arnold Arboretum during the year ending July 31, 1903.

During the year a larger number than usual of species of living plants has been added to the collections; many renewals of worn-out or unsatisfactory specimens have been made, and the living collections are believed to be richer and in a more satisfactory condition than at any time since the establishment of the Arboretum. Additional grass walks have been made where they were needed for access to the collections, and these can now all be reached easily and quickly. A culvert under South street of insufficient capacity had for years checked the flow of the Bussey Brook during periods of freshet, and at such times the banks of the brook at the base of Hemlock Hill have often been washed away or injured. During the year the City of Boston has replaced the old culvert by one large enough to carry the brook at the time of its largest flow, and the banks near South street have been graded and will be permanently planted. The City has also built a stone sanitary building for the use of the public at a convenient place near the middle of the Arboretum. The widening of Walter street and the change of its grade made a new boundary wall necessary along the whole north side of the Peter's Hill extension. This has been built during the year in a substantial manner with money awarded by the Street Department of the City of Boston for the purpose.

The exchange of plants and seeds with other botanical establishments has been continued during the year. 6,964 plants (including grafts and cuttings) and 3,199 packets of seeds have been distributed as follows: To the United States, 6,393 plants and 319 packets of seeds; to Canada, 187 plants; to Great Britain, 377 plants and 375 packets of seeds; to the continent of Europe, 7 plants and 2,279 packets of seeds; to Japan, 226 packets of seeds. There have been received during the year 4,928 plants and 652 packets of seeds.

During the year 3,168 sheets of dried plants have been added to the herbarium; and 540 sheets of duplicates have been distributed to other establishments.

The library has received by gift 700 bound volumes and 600 pamphlets.

During the year Mr. George R. Shaw of Boston has fitted up one of the halls in the Museum Building with handsome and convenient cases for the preservation and display of the collection of conifers. Mr. Shaw has now taken charge of this collection, which he is improving and extending with numerous additions, especially in the genus *Pinus*, in which he is particularly interested.

During the year I have made a journey round the world for the purpose of improving the relations of the Arboretum with other botanical establishments, and of thus widening its scope and increasing its usefulness, and also for the purpose of studying the distribution of trees and forests in parts of the north temperate zone which I had not seen. During this journey I visited the botanical establishments at Kew, Paris, Leyden, Berlin, St. Petersburg, Moscow, Tiflis, Hongkong, Singapore, Buitenzorg, and Tokio, and several commercial and private collections of plants in Europe. I was able to make considerable collections of dried plants in the Crimea and the Caucasus, in eastern Siberia and in Manchuria, on the eastern coast of Korea, in the neighborhood of Peking, on the islands of Hongkong, Singapore and Java, and in southern Japan. Of the scientific results of this journey, which is one of the most fruitful I have made, it is too soon to speak.

The work on the Bradley Bibliography of dendrological literature has been continued steadily throughout the year, and about 80,000 cards are now finished.

Instruction in dendrology has been given by Mr. Jack to students of landscape-gardening in the Institute of Technology, and during the spring months to a class largely composed of teachers. The average attendance at these spring lectures was thirty-eight.

During the year the following works have been finished at the Arboretum and published:—

Trees and Shrubs. Parts i and ii. Houghton, Mifflin & Co., Boston. Nov. 26, 1902; May 13, 1903. Plates 1–50.

The Genus Crataegus in Newcastle County, Delaware. *Botanical Gazette*, XXXV, pp. 99–110. C. S. SARGENT.

Recently Recognized Species of Crataegus in Eastern Canada and New England. i, ii, iii, iv, v. *Rhodora*, V, pp. 52–66; 108–118; 137–153; 159–168; 182–187. C. S. SARGENT.

Crataegus in Northeastern Illinois. *Botanical Gazette*, XXXV, pp. 377–404. C. S. SARGENT.

Crataegus in Rochester, New York. *Proceedings of the Rochester Academy of Science*, IV, pp. 93-136. C. S. SARGENT.

Synopsis of the Genus *Lonicera*. In *Fourteenth Report of the Missouri Botanical Garden*, pp. 27-232. Plates 1-20. ALFRED REHDER.

I am glad to take this opportunity to again express my thanks to the Trustees of the Massachusetts Society for the Promotion of Agriculture for their annual grant of \$2,500 for the maintenance of the Arboretum, and to the members of the Visiting Committee for their advice and assistance.

C. S. SARGENT, *Director*.

THE CHEMICAL LABORATORY.

TO THE PRESIDENT OF THE UNIVERSITY: —

SIR, — The Laboratory suffered a most serious loss by the death on April 6, 1903, of Henry Barker Hill, Assistant in Chemistry, 1870–74; Assistant Professor, 1874–84; Professor, 1884–1903; Director, 1894–1903.

During his nine years of service as Director the number of students working in the Laboratory increased from 442 to 674, and he succeeded in providing working places for these large and increasing numbers of students throughout this period except in the years 1897, 1900, and 1901, when waiting lists in the elementary courses resulted from the neglect of his often repeated warnings. In accomplishing this task he constructed two new laboratories for the elementary course with desks for 488 students, a laboratory for advanced quantitative analysis with places for twenty-three students, and a laboratory for students in physico-chemical research. A new lecture-room was also built, and nine of the rooms in Boylston Hall were remodelled to increase or improve their accommodations. This work was done in such an excellent manner, with the invention of new forms of fixed apparatus and ingenious adaptation of means to ends, that it is a matter of deep regret he was not spared to plan a laboratory unhampered by lack of room and money.

He also introduced a new and efficient system of ventilation for the entire building, and organized the administrative work in the most satisfactory manner. Especial mention should be made of the system of book-keeping devised by him, which at the same time reduced the labor and the chances of error to a minimum.

During his long service as a teacher he showed the same enthusiasm and efficiency. Following the lead of Professor Cooke, he developed qualitative analysis into one of the best of educational disciplines; and his course in organic chemistry, his own especial field, was a model of excellence.

His services as a teacher and administrative officer were more than equalled by his achievements as a chemist, described in forty-six papers, of which two are on methyluric acid, five on smaller subjects, and the remaining thirty-nine on the derivatives of furfuran, — a

field of research which he made peculiarly his own. The number of his papers does not give a fair idea of the volume of his work, as most of them are exceptionally long. All show his great qualities as a chemist, — his grasp of the subject, and power of close and logical reasoning, his uncommon experimental ability, the remarkable beauty of finish of both his experimental and literary style, and, above all, the thoroughness and accuracy which were his most striking characteristics.

The abolition of the course in general chemistry (Chemistry *B*) at the end of last year enabled the Division to secure the services of Dr. G. P. Baxter as an instructor, and to promote Dr. G. N. Lewis to an instructorship of a higher grade. As a result of this increase in the staff two new courses and two new half-courses were added, all of advanced grade, — a very profitable exchange for one very elementary course. The two full courses were one in applied chemistry by Professor Sanger (Chemistry 11), and one in advanced physical chemistry by Dr. Lewis (Chemistry 14). The two half-courses were one on photochemistry by Dr. Baxter (Chemistry 12), and a laboratory course on electrochemistry by Dr. Lewis (Chemistry 13). All of these courses were taken by as large numbers of students as could be expected. Dr. Baxter relieved Professor Sanger of the first course in quantitative analysis (Chemistry 4), and Professor Richards of the advanced quantitative analysis (Chemistry 9) and gas analysis (Chemistry 10). The teaching in quantitative analysis was in this way brought together, and placed in the hands of a specialist in this subject. Mr. O. F. Black was appointed assistant to the Director, and relieved him of a large amount of routine work. After Professor Hill's death, Mr. F. W. Russe gave the lectures in organic chemistry (Chemistry 5).

The new laboratory between Boylston Hall and the street came into use at the beginning of the year, and was very satisfactory in spite of the somewhat cramped passages necessary in order to fit the building to such a narrow lot. It interferes seriously, however, with the light of one end of the other cellar laboratory, thus rendering this room even less desirable than heretofore.

The introduction of this new laboratory provides accommodations for the present for the elementary courses (1 and 3), but, as noted in the Report of last year, this relief can be only temporary. The greatest danger now is the overcrowding of the higher electives, but the discussion of this subject belongs properly in the Report for next year.

ATTENDANCE AT LABORATORY COURSES. — INVESTIGATIONS. 235

The number of students in the several laboratory courses during the year and in June, 1902, was as follows:—

	October, 1902.	January 1st, 1903.	June 1st, 1903.	June 1st, 1902.
Chemistry 1	405	393	336	325
Chemistry 3	140	133	127	120
Chemistry 4	49	46	39	25
Chemistry 5	23	19	18	25
Chemistry 6	12	11	11	16
Chemistry 9	16	16	..	..
Chemistry 10 . . . . .	..	..	22	21
Chemistry 12	9	9	..	..
Chemistry 13 . . . . .	..	..	6	..
Chemistry 20a	4	4	4	4
Chemistry 20b	5	5	5	6
Chemistry 20c	2	2	2	3
Chemistry 20d	5	5	5	6
Chemistry 20e	4	4	3	5
Special . . . . .	..	..	..	1
Total	674	647	578	557

The following scientific investigations were carried on during the year: Professor Hill contrived a new apparatus for taking the melting points of organic substances, by means of which more accurate results can be obtained than with the earlier forms of apparatus; and devoted much time to the invention of an electric tube furnace. With Mr. O. F. Black he brought to a conclusion his work on nitrolactic acid, a puzzling research which had occupied his attention for many years. They also discovered a new and less dangerous method of making formiminoethyl-ether; and made good progress in the study of the tribromopyrazol derived from the oxime of nitromalonic aldehyd. With Mr. F. W. Russe he studied the optical isomeres of the beta and gamma dihydrofurfurane- α - α -dicarboxylic acids. Most of these papers are ready for publication.

Professor Sanger continued with Mr. M. L. McCarthy the study of the reaction of fuming sulphuric acid on silicic tetrachloride, showing that in all probability a volatile oxychloride of silicon is formed. With Mr. J. A. Gibson he developed a method of estimating small amounts of antimony by a modification of the Berzelius-Marsh method. With Mr. A. D. Wyman he made a study of the application of the method of Kinnicutt to the determination of small amounts of carbonic monoxide. Mr. E. Mallinckrodt, Jr., completed during this year a study of the dietary of students at Randall Hall. This study, which was begun in 1901-02, was carried on

with the coöperation of Professor Atwater of Wesleyan University, Drs. Sargent and Darling, and with the advice of Professor Sanger. The results show that the students under examination were doing good work on a diet which was considerably below that demanded by the so-called sedentary standard.

Professor Richards carried out a series of experiments with a new method of determining the freezing points of dilute solutions, showing that it is capable of attaining great accuracy. He devised also a new method of determining the compressibilities of liquids and solids, and with the help of Mr. W. N. Stull and Mr. F. Bonnet, Jr., applied this method to the following substances: bromine, iodine, chloroform, bromoform, carbonic tetrachloride, phosphorus, water, glass, mercury, iron, aluminum, lithium, sodium, and potassium. The results have an important bearing on the new theory of compressible atoms. Under his direction Mr. G. E. Behr, Jr., continued to study the effect of temperature and pressure on the solution-tensions of metals; Mr. K. L. Mark carried on further his work on the thermal expansion of gases under constant pressure; Mr. W. S. Hutchinson continued his work on the atomic weight of calcium; and Mr. R. C. Wells began the determination of the atomic weight of sodium, and made a detailed study of several possible sources of error in methods of analysis usually considered as among the most accurate of processes. Professor Richards received from the Carnegie Institution a grant of \$2,500, for these and other researches.

Dr. Baxter continued the work on the atomic weight of iron begun some years ago, and obtained a result from the analysis of ferrous bromide which confirmed the weight previously obtained with ferric oxide. Under his direction Mr. M. A. Hines determined with great accuracy the specific gravities of fused cadmic chloride and bromide, and of fused argentic bromide; and Mr. A. B. Lamb made a similar determination of fused zincic chloride.

Dr. Lewis continued work on his new ice calorimeter, constructing and testing a new form of this apparatus. He also showed that the decomposition of argentic oxide between 300° and 350° is a self-accelerating reaction of unusual character, forming the simplest conceivable type of explosion; and he began the study of solutions in melted iodine, a new class of electrical conductors.

Professor Jackson, with Mr. D. F. Calhane, continued the study of the paraphenylenediimines. With Mr. H. C. Porter the addition compounds of tetrabromorthoquinone were investigated, and two series of bodies derived from methylalcohol were discovered. With

Mr. H. A. Carlton many derivatives of tetrachlordinitrobenzol were studied, including numerous addition compounds of trianilinochlor-dinitrobenzol with various reagents. With Mr. Paul S. Smith the reactions of trichlortrinitrobenzol with sodic alcoholates and sodic malonic ester were taken up; and with Mr. J. F. Langmaid a similar study was made of the triioddinitrobenzol. Both these researches threw some light on the general subject of the replacement of halogens by other radicals and hydrogen. Papers on all these subjects are ready for publication.

The following papers were published during the year: —

1. Ueber die Einwirkung von Anilin auf Tetrabromorthobenzochinon. By C. L. JACKSON and H. C. PORTER. *Ber. d. chem. Ges.*, XXXV, 3851.
2. The Determination of Phosphoric Acid by means of Ammonium Phosphomolybdate. By G. P. BAXTER. *Am. Chem. Journ.*, XXVIII, 298.
3. Ueber Tetrachlordinitrobenzol. By C. L. JACKSON and H. A. CARLTON. *Ber. d. chem. Ges.*, XXXV, 3855.
4. The Universally Exact Application of Faraday's Law. By T. W. RICHARDS and W. N. STULL. *Proc. Am. Acad.*, XXXVIII, 409 (December, 1902); also *Zeitschr. phys. Chem.*, XLII, 621 (1903).
5. An Apparatus for the Measurement of the Expansion of Gases by Heat under Constant Pressure. By T. W. RICHARDS and K. L. MARK. *Proc. Am. Acad.*, XXXVIII, 417 (December, 1902); also *Zeitschr. phys. Chem.*, XLIII, 475 (1903).
6. The Transition Temperature of Sodic Sulphate referred anew to the International Standard. By T. W. RICHARDS and R. C. WELLS. *Proc. Am. Acad.*, XXXVIII, 431 (December, 1902); also *Zeitschr. phys. Chem.*, XLIII, 465 (1903).
7. Ueber additionelle Verbindungen des Tetrabromorthobenzochinons. By C. L. JACKSON and HORACE C. PORTER. *Ber. d. chem. Ges.*, XXXVI, 454.
8. On the Dibromdinitrobenzols derived from Paradibrombenzol. By C. L. JACKSON and D. F. CALHANE. *Am. Chem. Journ.*, XXVIII, 451.
9. A Revision of the Atomic Weight of Caesium. By T. W. RICHARDS and E. H. ARCHIBALD. *Proc. Am. Acad.*, XXXVIII, 443 (January, 1903); also *Zeitschr. anorg. Chem.*, XXXIV, 353 (1903).
10. On certain Colored Substances derived from Nitro Compounds. Fourth Paper. By C. L. JACKSON and R. B. EARLE. *Am. Chem. Journ.*, XXIX, 89.
11. Note concerning the Calculation of Thermochemical Results. By T. W. RICHARDS. *Journ. Am. Chem. Soc.*, XXV, 209 (February, 1903).
12. On the Oximes of Nitromalonic Aldehyde. By H. B. HILL and WILLIAM J. HALE. *Am. Chem. Journ.*, XXIX, 253.

13. On certain Derivatives of Picric Acid. By C. L. JACKSON and R. B. EARLE. *Am. Chem. Journ.*, XXIX, 212.

14. On Symmetrical Dinitrobenzolsulphonic Acid. By C. L. JACKSON and R. B. EARLE. *Am. Chem. Journ.*, XXIX, 216.

15. The Freezing Points of Dilute Solutions. By T. W. RICHARDS. *Journ. Am. Chem. Soc.*, XXV, 291 (March, 1903); also *Zeitschr. phys. Chem.*, XLIV, 563 (1903).

16. The Inclusion and Occlusion of Solvent in Crystals. By T. W. RICHARDS. *Proc. Am. Philos. Soc.*, XLII, 28 (April, 1903); also *Zeitschr. phys. Chem.* (Ostwald Jubelband).

17. The Changeable Hydrolytic Equilibrium of Dissolved Chromic Sulphate. By T. W. RICHARDS and FREDERIC BONNET, Jr. *Proc. Am. Acad.*, XXXIX, 1 (June, 1903); also *Zeitschr. phys. Chem.* (1904).

18. On certain Nitro Derivatives of the Vicinal Tribrombenzol. By C. L. JACKSON and A. H. FISKE. *Am. Chem. Journ.*, XXX, 53.

Professor Sanger also gave an address before the New England Association of Teachers of Chemistry on "The German Potash Industry," and Dr. Baxter one on "The Chemistry of the Exposure and Development of the Photographic Plate."

The Laboratory is under great obligations to Dr. Wolcott Gibbs and Mrs. H. B. Hill for generous gifts of books for the Chemical Library.

C. L. JACKSON, *Acting Director.*

THE JEFFERSON PHYSICAL LABORATORY.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,—The number of students enrolled in the electives in Physics, November, 1903, is as follows:—

Physics 1	68	Physics 5	7
" 2	14	" B	179
" 3	37	" C	230
" 4	14	" 20	3
		Total	552

I have given the present number in order that the trend of election of physical studies for the coming year may be seen. It is noticeable that Physics *C* continues to have a large number of students. This is very gratifying, for the accurate training obtained in this course peculiarly fits the students for the higher electives, and also trains those who intend to enter the Medical School in the fundamental principles of mechanics, optics, heat, and electricity. It seems to the Director desirable that students who propose to study medicine should be advised to take Physics *C*. The marked success of this elective is due to Professor Sabine, who has devoted himself to perfection of apparatus and to the enlargement of laboratory accommodations. Much of the space once devoted to the Physical Cabinet is now largely used in laboratory work. This change is highly desirable; for the unused and historical pieces of apparatus are before the student while he is engaged in testing the physical laws which they illustrate, and old apparatus, which is apt to be lifeless in its influence to all except an antiquarian, becomes alive and speaking to the working student.

The higher electives in physics are intimately bound together with the preparatory electives in mathematics; and whatever influences the election of such mathematical courses must also have an effect upon advanced work in physics. A statistical inquiry, therefore, into higher scholarship in physics should be preceded by one into the fundamental mathematical electives.

Professor Peirce has been much occupied in making the testing apparatus in Physics 3 accurate and permanent in arrangement. In this course, the student who intends to study electrical engineering


is taught the limits of error and the perception of magnitude of electrical quantities. Such training is indispensable to a student of engineering, for it cannot be obtained by working exclusively with electrical machinery. The study of refined methods should precede the approximate and comparatively rough methods of the practical workshop, for it is only by this method of procedure that one can know what to neglect, and what degree of accuracy is possible.

Professor Hall has found time, beyond the hours devoted to the elementary electives under his charge, to direct physical investigation, as is seen in the following list of scientific work.

Experience continues to show that, in general, Graduate Students acting as assistants or instructors are the most successful in pushing research work to a conclusion.

When we consider the rapid progress of Physical Science and its achievements, we are justified, I believe, in regarding it in all its relations, particularly with chemistry, as the science which has the closest relation to the problems of life. It seems therefore probable that in time its supreme importance will be recognized by endowments commensurate with those of astronomical science. There are many fields which cannot be entered by the Professors in the Jefferson Physical Laboratory on account of the outlay demanded. Among these may be mentioned researches on liquefied gases and matter at very low temperatures; investigation of the combinations produced in the electric furnace by currents of great strength, — at present currents of from fifty to sixty amperes or units are at our command; we need currents of two thousand amperes; my experience with high voltages leads me to desire to continue my researches with transformers similar to those employed at Niagara Falls. The electricians and electro-chemists employed by the great electric companies have far larger facilities than those afforded by any University laboratories, and doubtless many results are obtained in these practical laboratories which are important to the progress of science, but are buried because they have no immediate practical use. The progress of investigation of Radiations, which are constantly about us, and doubtless have an influence upon health and disease, requires rooms of constant temperature. Such rooms can only be obtained underground.

The Jefferson Physical Laboratory has one such room, ten feet beneath the surface of the basement. This room is constantly used in researches, but the limited space permits only one research at a time. A long gallery ten feet beneath the surface of the earth, with rooms opening into this gallery, would be of great use. A one-story



brick building should be built over such an underground laboratory. There are many phenomena due to minute and long-continued action at constant temperature which must be studied under similar conditions which conduce to the mysterious growth of the mushroom spore. When we consider the impossibility of maintaining constant conditions of temperature and freedom from radioactive emanations in ordinary working rooms provided with windows and doors, it will be seen that permanent states of the environment cannot be obtained above ground. I do not know of such a laboratory either abroad or in this country. Such a laboratory would be unique.

In order to obtain an approximate idea of the outlay needed for work in the rapidly expanding directions of Physical Science which I have indicated, the following estimate is given: —

Apparatus for liquefying gases	\$4,000
Electric furnace	10,000
Underground laboratory	20,000

The following list of work accomplished and published, or in condition to be immediately published, shows the enthusiasm in research which has been stimulated by the Thomas Jefferson Coolidge Fund for Original Research: —

1. The Spectra of Hydrogen and Reversed Lines in the Spectra of Gases. By JOHN TROWBRIDGE. *Phil. Mag.*, January, 1903.
2. Spectra of Gases and Metals at High Temperatures. By JOHN TROWBRIDGE. *Phil. Mag.*, July, 1903.
3. On Families of Curves which are the Lines of certain Plane Vectors either Solenoidal or Lamellar. By B. O. PEIRCE. *Proc. Am. Acad. Arts and Sciences*, 1903.
4. On the Temperature Coefficients of Magnets made of Chilled Iron. By B. O. PEIRCE. *Proc. Am. Acad. Arts and Sciences*, 1903.
5. On the Lines of certain Solenoidal or Lamellar Vectors Symmetrical about an Axis. By B. O. PEIRCE. *Proc. Am. Acad. Arts and Sciences*, 1903.
6. An Investigation in Thermodynamics, viz., C_p in Liquids and the a of Van der Waals in the Case of Water. By E. H. HALL. *Physical Review*, 1903.
7. Do Falling Bodies Move South? Parts 1 and 2. By E. H. HALL. *Physical Review*, 1903.
8. A Manometer Device for Air Thermometers. By E. EDWARDS, under the direction of W. C. SABINE. *Proc. Am. Acad. Arts and Sciences*, 1903.

9. Resistance Bridge for the Platinum Thermometer. By E. EDWARDS, under the direction of W. C. SABINE. *Proc. Am. Acad. Arts and Sciences*, 1903.

10. False Spectra from the Rowland Concave Grating. By THEODORE LYMAN. *Astro Physical Journal*, 1903.

11. Prolongation of Spectral Lines. By THEODORE LYMAN. *Astro Physical Journal*, 1903.

12. Diffusion and Supersaturation in Gelatine. By H. W. MORSE and G. W. PIERCE. *Physical Review*.

13. On the Cooper Hewitt Mercury Interrupter. By G. W. PIERCE. Completed, but not yet published.

14. Influence of Occluded Hydrogen on the Electrical Resistance of Platinum. By W. E. McELFRESH. Completed, but not published.

15. On the Relation of the Hall Effect to the Current Density in Gold. By T. C. MCKAY. Completed, but not published.

JOHN TROWBRIDGE, *Director*.

THE DIVISION OF ENGINEERING.

TO THE PRESIDENT OF THE UNIVERSITY : —

SIR, — I respectfully submit the following report on the Division of Engineering for the year 1902-03. The instruction during the year has presented no new features, having been carried on very much as during the previous year, with the addition, however, of one new professor of electrical engineering, whose appointment has materially strengthened that branch of the work. Heretofore Professor Adams and Mr. Whiting have undertaken more work than they were well able to do, and the coming of Professor Kennelly will therefore enable them to spend more time in the laboratory or the library for special research. During the year, also, a large amount of machinery was purchased for the equipment of the electrical engineering laboratories. This was the gift of a graduate of the University.

In civil and mechanical engineering, the instructors still have too much work in the class-room to be able to do any research work of their own or to do any kind of work outside of the University without sacrificing the instruction. It seems almost necessary that they should be relieved to some extent before many years, both for the sake of the students and for their own advancement. During the fall and winter Professor Johnson was able to make some investigations of concrete beams and of the general application of concrete to buildings, looking towards its use in the construction of the new athletic stands. The results of the tests made in the laboratory will be published in due time.

At present the lack of money renders it difficult to extend the thesis work of the students. Nothing is more important than this in connection with advanced courses. Students who come from other colleges should be encouraged to spend much of their time in research. Their work can be directed so as to contribute materially to the profession of engineering.

The Engineering Journal, which was begun in 1901-02, is published by the engineering and architectural students of the University. It has been well conducted, and a number of useful articles have appeared in it. One of the chief difficulties, however, of maintaining such a journal is the cost of publication. The students have to depend upon advertisements to some extent to defray expenses.

During the year a large number of students in the department were college students, who had entered the University with the intention of getting the A.B. degree, and, subsequently, the degree in engineering. So long as the work of these students can be directed properly, this is a very satisfactory way of learning engineering, and it is to be hoped that it may increase from year to year.

IRA N. HOLLIS.

THE PSYCHOLOGICAL LABORATORY.

TO THE PRESIDENT OF THE UNIVERSITY: —

SIR, — The principal event in the life of the laboratory during the last year has been the appearance of the first volume of the *Harvard Psychological Studies* (Macmillan). The 654 pages of the volume contain sixteen investigations carried on by the instructors and most advanced students during preceding years in the Harvard laboratory. They deal essentially with processes of perception, memory, emotion and reaction. The material for a second volume is completed, and we hope to publish it during the next year. In this volume problems of attention, space and time perception, feeling and judgment, and studies in animal psychology will stand in the foreground.

The laboratory has seen no essential changes in its equipment or in the arrangement of courses. The new half-course, given by Dr. Yerkes, on Comparative Psychology, which involves many laboratory demonstrations, has proved a most successful supplement to Dr. Holt's half-course, which is an experimental introduction into Physiological Psychology. The chief accent of the year's work lay again on research, which was carried on by the instructors and sixteen graduate students and young doctors. Four of the students, Messrs. R. P. Angier, C. T. Burnett, M. A. Shaw, D. C. Rogers, took their Ph.D. with dissertations from their laboratory research. As the work of the year was characterized by the great variety of the research work in the laboratory, it may be in order to point to the various subjects which have been under investigation. I may add that while each special research is in charge of one student, the leader needs from two to ten subjects, on whom the work is performed; and since the psychological self-observation of these subjects presupposes full training, only advanced students can be used for it. The programme is therefore arranged in such a way that every member of the laboratory carries on one investigation for himself in about half of his working time, and devotes the other half to four, five, or six different investigations in which he takes part as subject, thus becoming acquainted with a great variety of methods.

R. P. Angier studied the physiological psychology of our aesthetic pleasure in unequal divisions of space, his work being a continuation of our earlier research in equal, symmetrical divisions. Among other

dredth anniversary of Emerson's birthday, the completion of the collection of the \$150,000 which the Corporation had determined as the minimum requirement for the building of Emerson Hall. We are thus sure to have in time a hall devoted to philosophy and psychology, a hall of which one floor will be given over to the Psychological Laboratory. But there can be no doubt that this minimum sum is insufficient for the erection of the building which the architect has planned on the basis of the moderate wishes of the department. If no further funds can be added, the plans will have to be curtailed essentially, and every sub-division, the Psychological department not the least, would feel a heavy disappointment. If the plans of the laboratory have to be reduced, the fear is justified that the improvement as to the local conditions will be only a temporary one. With a slight expansion of the work, which we hope for in several directions, the old lack of room would again interfere with our progress. We confidently hope, therefore, that before the building on Quincy street, opposite Robinson Hall and next to Sever Hall, is started next spring, at least \$50,000 more will come to us from sources which appreciate the name of Emerson.

HUGO MÜNSTERBERG,
Professor of Psychology.

THE OBSERVATORY.

TO THE PRESIDENT OF THE UNIVERSITY : —

SIR, — The problem of obtaining the greatest return for astronomical science from a given expenditure of money should be the principal concern of every astronomer. It is obvious that no single observatory can accomplish as much and as good work as could be done through the efforts of the entire astronomical world. The recent attempt on the part of this Observatory to secure an endowment for international astronomical research has led certain persons to infer that the present needs at Harvard are supplied. An important part of this very plan is to enable a large observatory like this, which can undertake to great advantage large pieces of routine investigation quite beyond the reach of the smaller observatories, to use its resources to the best advantage. It can coöperate with others, and thus bring the energy of many minds to bear upon a single problem. As an illustration, it is recognized that the distribution of the stars in space is one of the most important problems in Astronomy. This investigation depends on the accurate measures of the light of stars in all parts of the sky. But little work of this kind has been done on the light of the southern stars. Especial attention has been paid to photometry at this Observatory, and we have an excellent southern station where such work could be carried on to great advantage. An expenditure of one thousand dollars annually for five years would go far to provide for this want; but as the expenses here for the last year have exceeded the income, additional work cannot be undertaken. Again, the Harvard collection of astronomical photographs gives the history of the stellar universe for the last fourteen years with a completeness not attempted elsewhere; but these photographs are of little use unless a careful study is made of them. A satisfactory plan has been prepared for organizing a corps of observers at a cost of about five thousand dollars a year, for studying these photographs. The Carnegie Institution appropriated \$2,500 last year for this work, but gave no assurance that it would be increased, or even continued. Results have already been obtained which show what might be expected from a permanent maintenance of this work; but if the appropriation is not continued much work will be lost, and many assistants who have been carefully

trained will be obliged to seek work elsewhere. The great increase in the resources of the Observatory has not been accompanied by a similar increase in the amount of capital available for plant. Accordingly, the buildings and instruments here, purchased mainly from income, are very inferior to those of other observatories whose endowment is much less. The anonymous gift of 1902 has been of the greatest service in this respect, since it will provide two reflectors of twenty-five inches aperture, one for use on the northern, and the other on the southern stars, and has given us a fireproof wing to the building already used for storing and studying the photographs. The cost of the entire building and wing was only about \$20,000, and two similar buildings would provide for a much needed new library for the Observatory, computing rooms, photographic laboratory, and a workshop. All of this work is now carried on in very inferior wooden buildings, some of them more than half a century old. Much money is also spent in strengthening floors and repairing foundations; and the danger from fire is ever present.

If the sum of \$50,000 could be expended during the next ten years for such researches and buildings as those mentioned above, it is believed that a relatively large return in scientific results would be obtained. Our expenses now slightly exceed our income, and if they are cut down, a proportionately greater diminution in work will ensue. An unrestricted fund like that mentioned above would permit our present appliances to be used to the best advantage. Whatever may be the future of the Observatory, there is no doubt that a reasonable sum could be wisely expended at once, while a delay of several years may bring other conditions less favorable to effective expenditure, and will certainly cause some needs to be neglected which now seem most urgent.

OBSERVATORY INSTRUMENTS.

East Equatorial.—Nearly all of the observations with this instrument have been made by Professor O. C. Wendell, and have been of the same general character as in previous years. Over fifteen thousand photometric light comparisons have been made, principally with the polarizing photometer with achromatic prisms.

The errors of observation with this instrument, for a set of sixteen settings, have an average value of from three to four hundredths of a magnitude. Deviations of a tenth of a magnitude generally indicate real changes in the star measured. The effect of color also seems less troublesome than with visual observations. About two thousand measures have accordingly been made of stars suspected of variability by other observers, and questions hitherto unsettled are

thus answered with certainty. The times of minima of stars of the Algol type can be determined with a computed probable error of less than two minutes. An attempt is made to measure, every year, all stars which vary more than half a magnitude an hour, on three nights when increasing in light, and on three when decreasing in light. About six thousand measures have been made of such objects. Seven hundred measures have also been made with a second photometer adapted to the comparison of stars too near together to be measured with the first instrument. The same instrument has been used in the photometric measurement of Jupiter's satellites while undergoing eclipse. Fifteen eclipses have been observed, making the total number 751. Observations of variable stars of long period throughout their changes, and the reduction of the results to the scale of the meridian photometer have been continued; 279 estimates of faint variables and a few of comparison stars have been made by the method of Argelander.

Similar observations of variables and comparison stars have been made with the West Equatorial. With it 1,724 estimates of variables and 399 of comparison stars have been made by Miss Cannon. 3,395 estimates of variables, and 323 estimates of comparison stars have been made by Mr. Campbell with the naked eye, field-glass, and a 5-inch portable telescope. Some estimates of faint variables and photometric measurements of double stars were also made by Mr. Campbell during the month of August, with the East Equatorial. 577 estimates of variables have been made by other officers of the Observatory. 764 estimates of variables have been made by Mr. F. E. Seagrave of Providence, and communicated by him to this Observatory. Observations of variable stars have also been communicated by Professor Reed and Mr. Daniel of Princeton University, Professor Stone of the University of Virginia, Professor Mary W. Whitney of Vassar College, Miss Anne S. Young of South Hadley, Mass., Miss Louise C. Hazen of Austin, Texas, Mr. John H. Eadie of Bayonne, N. J., and Mr. Robert M. Dole of Jamaica Plain.

Meridian Circle.—The only important work of this instrument during the year has been the determination of clock error. Daily observations of this kind have been made when the weather permitted, in order to give as much accuracy as possible to the time signals. The principal observer has been Miss M. F. Michaelis.

All the columns of the catalogue of stars belonging to the zone $-9^{\circ} 50'$ to $-14^{\circ} 10'$ are now provisionally complete, except that current numbers are not yet assigned to the stars. The work of

re-computing particular observations, in cases of large discrepancy, is also very nearly finished. The provisional residuals of the separate observations of each star from the mean values obtained for its right ascension and declination have been formed, and entered in the journals of the separate zones, and their mean value for each zone has been taken. The reductions of the fundamental stars in those zones for which these mean values are largest will be re-computed. About two thirds of the work of preparing the zone journals for printing is finished; but the provisional values may need later corrections.

The reductions of the observations made by the late Professor Rogers, during the years 1879 to 1883, have been continued by Miss S. C. Bond under the supervision of Miss Anna Winlock. About two thirds of the reductions to apparent place for the individual observations are completed, and the values of the inclination, about 2,000 in number, have been grouped in declination.

12-inch Meridian Photometer. — With this instrument 71,992 settings have been made by the Director on 143 nights. In all, 337,596 settings have been made in five years. The principal work has been the completion of the observations required in the researches undertaken in previous years, and the measurement of all the *Durchmusterung* stars in zones 10' wide, north of declinations -5° and -15° . A beginning has been made of the observations of stars in similar zones south of $+5^{\circ}$, $+15^{\circ}$, and $+25^{\circ}$. This work will supplement that already completed at declinations -20° , -10° , 0° , $+10^{\circ}$, etc. Measures have also been made of sequences of stars from the eighth to the thirteenth magnitude, in twenty-three coarse clusters, to determine the absolute magnitudes of the components of these objects. By interposing a shade glass so as to reduce the light of the star, any star however bright could be measured. Faint stars were selected near the ten brightest stars, and measures of all were made on ten nights. Sirius and a twelfth magnitude star were thus measured successively.

Another modification of the instrument permitted surfaces to be measured. 2,672 settings were made to determine the light of the sky, in the daytime, during twilight, and at night, the light of the different portions of the Moon, and of the sky at different distances from it. A range of more than seventeen stellar magnitudes was obtained, or lights were compared, some of which were about seven million times as bright as others. The average deviation of the settings was about four hundredths of a magnitude, or only one-half that of similar measures of stars.

On May 25, 1903, the Director made his one millionth photometric setting, having made 39,796 settings with the 2-inch, 643,308 with the 4-inch, and 316,896 with the 12-inch meridian photometers. Observations with the 15-inch equatorial, some of which are discussed in Volume XI of the *Annals*, and early photometric measures of eclipses of Jupiter's satellites, extending over fifteen years, are not included in this count.

HENRY DRAPER MEMORIAL.

The number of photographs taken with the 11-inch Draper telescope was 467, making 14,487 in all with this instrument; with the 8-inch Draper telescope, 1,680, making the total number 30,978. The entire number of photographs of the stars taken at Cambridge during the year is 5,130. Eight eclipses of Jupiter's satellites, and five occultations, have been successfully photographed with the 11-inch Draper telescope. Four variable stars have been found by Mrs. Fleming, and one by Miss Breslin, from the examination of the Draper photographs.

Owing to the pressure of other work during the daytime Mrs. Fleming has not been able for some time to continue the classification of the spectra for the Southern Draper Catalogue. Suitable arrangements have accordingly been made so that she is now doing this work at her home in the evening. In this way she has classified the spectra and measured the light of 3,506 stars. These stars are all south of declination -60° . It is hoped shortly to complete this zone, and to publish the results as a catalogue which will contain nearly all the stars photographically brighter than the ninth magnitude. The determination of the magnitudes and positions of the comparison stars for the variables discovered here has proved a larger work than was anticipated. The catalogue will contain nearly four thousand stars, of which more than half are now in print. A large part of the time of the entire corps of computers has been devoted to this work, and to the ledgers showing the changes in light of these variables during the last fifteen years. The results will occupy two and perhaps three volumes of the *Annals*. Besides the routine work involved in the identification, cataloguing, and care of the plates, the spectra of many known variables have been determined, and the stars in the Revised Harvard Photometry, too faint to appear in Volume XXVIII, are now being classified.

The general plan of taking the photographs, as described in previous reports, has been maintained under the direction of Mr. King.

Photographic observations of the Lunar eclipse of October 16, 1902, were interrupted by clouds. Visual observations by Mr. C. M. Olmsted showed a diminution of about eleven magnitudes in the light of the Moon during totality, or that the light of the eclipsed Moon was about equal to that of a star of the magnitude zero. Among other photometric investigations of plates it was found that a reduction of temperature from 70° to 0° F. increased the sensitiveness of plates by about half a magnitude. A stereo-comparator was constructed, and gave satisfactory results. Photographic charts have been made here of the regions of asteroids which have not been observed elsewhere during the last three years. Several asteroids have thus been found, but owing to the faintness of the greater portion of these objects the 8-inch Draper telescope, which was the instrument employed, is hardly large enough for this work.

BOYDEN DEPARTMENT.

The station at Arequipa has remained under the charge of Professor Bailey. The number of photographs taken with the 13-inch Boyden Telescope is 138, making 10,768 in all; and with the 8-inch Bache Telescope it is 1,899, making 32,647 in all. The total number of photographs of the stars taken during the year is 3,638. Measures have been made on 21 nights, with the meridian photometer, mainly in extending to the South Pole the system of bright standard stars, one in each ten degrees square, of which a part is contained in Volume XLVI, Chapter II. Many measures were also made with the Rumford Photometer attached to the 13-inch Boyden Telescope. Notwithstanding its faintness, the variations in the light of Eros have thus been measured by Professor Bailey from March 30 to August 19. Excellent curves have been obtained which show a variation in the range from about half a magnitude to a magnitude. 539 observations of 50 southern variables have been made, besides a careful study of their comparison stars. The dome of the 13-inch telescope has been repaired and remodelled, and arrangements have been made for the installation of electric lighting.

BRUCE PHOTOGRAPHIC TELESCOPE.

The number of photographs taken with the Bruce Photographic Telescope is 413, making 6,587 in all. Although these plates are difficult to handle and liable to be broken owing to their size, which is 14 by 17 inches, yet they are proving extremely useful, since by their aid stars may be studied which are much too faint to be photographed with our other instruments. The scale also permits posi-

tions to be determined much more accurately than with smaller instruments. 42 of these plates had exposures of one hour, and showed the spectra of the stars, the remainder were chart plates, of which 17 had exposures of four or five hours, 66 of one hour, 166 of ten minutes, 87 were of the planet Eros, and 35 were miscellaneous. Mr. Frost, from an examination of 18 photographs, found 37 nebulae not contained in Dreyer's Catalogue. On one plate he counted 10,926 stars in one square degree.

BLUE HILL METEOROLOGICAL OBSERVATORY.

The Blue Hill Meteorological Observatory, directed by Mr. Rotch, continues to be maintained at his expense. Mr. Arthur E. Sweetland, who had been the youngest assistant during seven years, died in May, and Mr. Lewis A. Wells was appointed in his place. Data for the upper air were collected in fifteen kite-flights, of which twelve were the monthly ascensions in the international series. The average height above the sea, attained by the meteorograph, for all the flights was 6,450 feet, and the greatest height in any flight was 12,070 feet. The observations obtained with the kites during 150 flights from 1897 until 1902, on Blue Hill and the Atlantic Ocean, are contained in Volume XLIII, Part III, of the *Annals*, as is also a discussion by Mr. Rotch of the effect of Meteorological Conditions upon Audibility. It is planned to discuss the observations of optical refraction in the lower atmospheric strata, that have been made on Blue Hill, with reference to their meteorological conditions. The reconstruction of the Observatory, mentioned last year as in progress, is completed. On the interior frieze of the new library are placed copies of the bas-reliefs on the Tower of Andronikos Kyrrhestes at Athens, representing the eight allegorical figures of the winds. The 4,400 volumes and 3,400 pamphlets contained in the library render it one of the most complete meteorological collections in this country.

MISCELLANEOUS.

Library. — The Library of the Observatory has been increased by 390 volumes and 1,455 pamphlets. The total numbers of volumes and pamphlets in the Library on October 1, 1903, were 10,759 and 18,634, respectively. An unsuccessful attempt has been made, during the past year, to obtain a fireproof building for the Library. The increasing value of this collection, now one of the most complete of its kind in the country, and the danger of injury or destruction in its present contracted quarters render this need a very urgent one. A suitable detached building could be erected for twenty thousand

dollars, or a second wing could be added to the building in which the photographs are stored, for a smaller sum. Such a building would be especially suitable as a memorial.

Telegraphic Announcements. — During the last year 32 bulletins have been issued, making 143 in all. The bulletins are sent gratuitously to all such institutions, newspapers, and individuals as desire them and are likely to make use of them. In general, when a cipher telegram is received at the Observatory, it is translated, printed by an autographic process upon the bulletin sheets, and mailed within an hour of the receipt of the original message. Several persons are prepared to take charge of the distribution, so that in the absence of one, another is available. Of the messages distributed this year, eight were received from Professor Kreutz, Kiel, five from the Lick Observatory, three from Mr. John Ritchie, Jr., two from Mr. Seagrave, one each from eight other sources, and five originated from this Observatory. The distribution of the announcements by telegraph is continued to subscribers who wish to pay for the messages.

Astronomers are requested, as heretofore, to send announcement of their discoveries to this Observatory for transmission to the observatories of Europe and America. To secure prompt attention, it is requested that all cablegrams be addressed "Observatory, Boston," and all telegrams "Harvard College Observatory, Cambridge, Mass." All correspondence relating to telegrams and announcements should be addressed to the Director.

Publications. — Volume XLIV, Part II, and Volume XLVIII, Nos. 2, 3, and 4, have been printed and distributed. Volume XLVI, Part I, Observations with the Meridian Photometer during the years 1899–1902; Volume XLVIII, No. 5, Distribution of Stars; No. 6, Observations of Eros with the Meridian Circle; No. 7, Observations of Nova Persei No. 2 with the Meridian Circle; No. 8, Intensity of Atmospheric Lines in the Solar Spectrum, and Volume LI, A Photographic Atlas of the Moon, are nearly ready for distribution. 97 pages of Volume XLIII, Part III, Observations and Investigations made at the Blue Hill Meteorological Observatory in the years 1901 and 1902; 9 pages of Volume XLVI, Part II, Observations of Variable Stars made with the Meridian Photometer during the years 1895–1898; 30 pages of Volume XLVII, Photographic Study of Variable Stars; 56 pages of Volume XLIX, Photometric Observations made with the East Equatorial; and 21 pages of Volume LII, Photometric Observations of Jupiter's Satellites, are in type. The first forty-five volumes of the Annals are therefore completed with the exception of Volumes XXXIX and XLIII. The

later volumes to LII have been begun, with the exception of Volume L.

The Revised Harvard Photometry, a catalogue giving the photometric magnitudes of about nine thousand stars, is now approaching completion. All stars in any part of the sky and of the magnitude 6.5 and brighter in any of our photometric catalogues are included. The magnitude of each star will be shown according to each photometric catalogue, whether published here or elsewhere, also its various designations and its class of spectrum. These magnitudes can now be furnished to any astronomer who needs them, and it is expected that in a few months the catalogue will be in the hands of the printer.

The best method of placing the results represented by our photographs in the hands of astronomers is a serious question. Photo-engravings of enlargements of the original negatives are very expensive, and besides reproducing the defects in the original photographs add others of their own. Far more can be shown per square inch on a glass negative than on a paper print. The photographs taken with the Arequipa and Cambridge Anastigmatic lenses cover regions rather more than 30° square on an 8×10 plate. Although the aperture but little exceeds one inch, stars as faint as the twelfth magnitude are obtained with exposures of about sixty minutes. Fifty-five of these negatives were selected, covering the entire sky. Contact prints were made from these, and printing from them gave sets of negatives closely resembling the originals, except that the stars were larger and more easily seen. These sets, covering the entire sky, and showing stars down to about the twelfth magnitude, were then offered to astronomers for \$15.00, or less than the original cost. The deficit has been charged to the Advancement of Astronomical Science Fund of 1902.

Eight circulars have been issued during the year. The numbers, titles, and dates, are as follows:—

66. Miscellaneous Results, No. 1. October 1, 1902.
67. The Total Lunar Eclipse of October 16, 1902. November 17, 1902.
68. Transparency of Comet 1902 b. January 27, 1903.
69. Grant from the Carnegie Institution. January 26, 1903.
70. Nova Geminorum before its Discovery. April 3, 1903.
71. A Photographic Map of the Entire Sky. May 19, 1903.
72. Intensity of Spectral Lines. July 29, 1903.
73. Opposition of Eros (433) in 1905. September 12, 1903.

Of the publications described above, the Annals furnish the official and final publication of the results of the work of the Observatory.

The Circulars are at first sent mainly to editors of astronomical periodicals, and to others who are likely to reprint or otherwise bring them to the notice of astronomers. A general distribution is made later, so that they thus serve the purpose of reprints from periodicals. The Bulletins described under Telegraphic Announcements are intended to supplement the notices of discovery telegraphed to astronomers. They furnish additional and fuller information, and are sent promptly and free of cost to every one who wishes to use them. An attempt is made to observe a large number of variable stars of long period at least once a month, by coöperation with the astronomers mentioned on page 251. The concluded magnitude of each variable for the tenth of each month is sent to the observers taking part in this work. Several of these compilations have been printed in *Popular Astronomy*, X, 443; XI, 52, 99, 213, 271, 339, and 403.

Besides these publications and the reprints, extracts, and notices of them, the following minor publications have been made by the officers of the Observatory:—

Fifty-seventh Annual Report of the Director of the Astronomical Observatory of Harvard College. Cambridge, 1902.

The Leonids. By W. H. Pickering. *Popular Astronomy*, X, 400.

Lunar Phenomena in October. By W. H. Pickering. *Ibid.*, X, 419.

Bright Star-like Point on the Moon. By W. H. Pickering. *Ibid.*, X, 497.

The Leonids. By W. H. Pickering. *Ibid.*, XI, 16.

A Standard Scale of Telescopic Observations. By W. H. Pickering. *Ibid.*, XI, 113.

Relation of the Moon to the Weather. By W. H. Pickering. *Ibid.*, XI, 327.

The Endowment of Astronomical Research. By Edward C. Pickering. Cambridge, 1903.

The Algol Variable 4,1903 Draconis. By Edward C. Pickering. *Astron. Nach.*, CLXII, 31.

EDWARD C. PICKERING, *Director.*

THE MUSEUM OF COMPARATIVE ZOÖLOGY.

TO THE PRESIDENT AND FELLOWS OF HARVARD COLLEGE:—

During the past academic year the regular courses in Zoölogy were given in the Museum, this being the first year that this department has enjoyed complete possession of the rooms formerly occupied by the Department of Geology, now finally housed in the new southwest corner-piece, — the Geological Section of the University Museum.

Eleven courses in Zoölogy were given by Professors Mark, Jackson, Parker, Castle, and Dr. Rand, assisted by Messrs. Carpenter, Cushman, Peters, Smith, and three sub-assistants. These courses were attended by two hundred and seventy-one students. Three courses were given to nineteen students of Radcliffe College.

Seventeen courses under the Department of Geology were given by Professors Shaler, Davis, Jackson, Ward, J. B. Woodworth, and Dr. Jaggar, assisted by Messrs. Cushman, Goldthwait, Read, and Wilder. Five hundred and fifty-nine students attended these courses. Five courses were attended by forty-five students of Radcliffe College.

The year has been an eventful one in the number and value of the collections acquired by the Museum. Chief amongst these are the collections of recent and fossil insects of Mr. S. H. Scudder. In transferring his collections to the Museum at this time Mr. Scudder has anticipated a clause in his testament by which these collections are bequeathed to the Museum. No gift of such importance and scientific value, representing as it does the life work of one of the foremost students of systematic entomology, has come to the Museum for many years. Mr. Scudder's gift was acknowledged by the Faculty of the Museum at a meeting held July 9.

The large and valuable Bryant collection of birds which was on deposit in the Museum has been formally and unconditionally presented by Mr. Henry Bryant Bigelow. The importance of this acquisition to our ornithological collections is recognized in Mr. Brewster's report.

From Mr. Thomas Barbour we have received an extensive and important collection of alcoholic reptiles and batrachians, the private collection of the donor. This gift is of especial value as it fills many gaps in our series. The Museum is also indebted to Mr. Barbour in many other ways. It is a pleasure to note here the increasing

interest taken in the Museum by those students of Harvard University attending courses in the building, as shown by their gifts and additions to its collections.

From the estate of the late John Bellows, Esq., of Gloucester, England, has been received a series of Devonian and Carboniferous corals bequeathed by him to the Museum. This collection consists of upwards of one hundred and fifty lots of polished sections showing structural details, many of them of extreme beauty.

A valuable series of palaeozoic fishes obtained from various sources in Europe by Dr. Eastman has been received from Mr. Agassiz. This accession supplements the extensive collections of fossil fishes in the Museum. For comparison in his studies of the elevated reefs and limestones of the Pacific Islands there has been received through Mr. Agassiz from the Coral Reef Committee of the Royal Society a series of samples of the core from the deep boring made by Professor David on the atoll of Funafuti.

The reports of the different departments show minor gifts and accessions from many sources.

Owing to many petty acts of vandalism perpetrated by the lawless element of the ever-increasing numbers of public visitors, the Museum Committee has employed a uniformed watchman to patrol the exhibition rooms during the hours when the Museum is open to the public. The salutary effect of this is felt throughout the different sections of the University Museum.

By the appointment of Mr. George Nelson as Preparator, the Museum has satisfied a great need and secured a competent and zealous helper.

Notable changes have been made in some of the exhibition rooms. The Tertiary, Quaternary, and Jurassic Rooms have been completely cased, heavy plate-glass the full height of the cases being employed, thus avoiding the obtrusive sash bars of the cases in the older exhibition rooms. In two of the rooms plate-glass screens forty feet in length have been constructed, behind which the larger fossil vertebrates are grouped. The exhibits in these rooms are in process of installation. In the hallway of the main entrance on the second floor a large case has been constructed to contain an exhibit of apparatus used in the investigation of the ocean, such as sounding machinery, deep-sea nets and trawls, dredges, etc.

The arrival of a superb specimen of the giraffe from Rowland Ward has necessitated a radical change in the African Room. The three floor cases which contained the larger mammals have been removed, and a single large plate-glass case with a monitor top,

eighteen feet in height, erected in its place. The effect is pleasing and dignified, and adds much to the attractiveness of one of the most interesting of the faunal exhibits. It is hoped to install such large central cases in others of the faunal rooms.

The Pacific Room has received many important additions in birds from the Hawaiian and Galapagos Islands, and many minor exhibition specimens have been distributed throughout the Museum, chief amongst which are the mounted turtles and reptiles in the North American Room, the work of Mr. Nelson.

Dr. T. Wayland Vaughan visited the Museum to examine the extensive collections of limestones from the Pacific Islands, brought together by Mr. Agassiz, with a view to preparing a report on the fossil corals. The material selected by him has been forwarded to Washington. Professor C. L. Edwards and his assistant spent several days in Cambridge studying the collections of Holothurioidæ. The palæozoic starfishes loaned to Dr. Suchert have all been returned.

The Library report of Mr. Henshaw shows the accessions for the year to be 9,147 volumes, parts of volumes, pamphlets, and maps, nearly doubling in number the accessions registered in the last report. The total number of volumes now in the Museum Library is upwards of 38,000, and of pamphlets upwards of 30,000. This great increment is due in a measure, as Mr. Henshaw points out, to parts of the Hagen and Whitney libraries not hitherto catalogued. In speaking of the Library, I must here again call attention to its increasing demands upon the general funds of the Museum for its maintenance in the interests of the students of the University and Radcliffe College. Library funds are much needed for books, binding, and salaries.

The Museum publications of the year include thirteen numbers of the "Bulletin," with 749 pages and 48 plates, and two numbers of the "Memoirs," with 457 pages and 241 plates, — an increase of 462 pages and 173 plates as compared with the publications of last year. The two "Memoirs" are reports on the Results of Mr. Agassiz's Tropical Pacific Expedition (Nos. IV and V). Two numbers of the "Bulletin" are upon geological results of Mr. Agassiz's Fiji Expedition and one upon his expedition to the Maldive Islands. Volumes XXXIX, XLI, XLII, XLIII, XLV of the "Bulletin," and XXV, XXVI, XXVII, XXIX, and XXX of the "Memoirs" are now in course of publication.

A gift of particular interest is an early oil portrait of Professor Louis Agassiz, the founder of the Museum, presented by Captain

C. H. Davis, U. S. N. There has been hung in the hall of the main entrance a portrait of Mr. Alexander Agassiz by Lefebvre, a bronze tablet under which bears this inscription :— *Alexander Agassiz. This memorial of his great services to Science and the University given by his friends and placed here by special vote of the President and Fellows and Board of Overseers*,— a welcome and fitting gift, a proper tribute. A portrait of the late Sturgis-Hooper Professor of Geology, Josiah Dwight Whitney, by De Camp, has been presented by his family and hangs in the main room of the geological library. The Museum now possesses more than two hundred and fifty framed portraits of distinguished zoölogists and geologists, and many more that have not been hung are stored in the library and the offices. From Sella and Dr. Fritz Benesch of Vienna has been received an important collection of photographs of the Dolomite region.

W. McM. WOODWORTH,
Keeper of the Museum.

THE ZOÖLOGICAL LABORATORY.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,—The courses in Zoölogy were not materially altered from those given in the preceding year, though the laboratory exercises were in some cases considerably changed. The number of students in the several classes from the various departments of the University during the year 1902–03 is shown in the following table, the numbers printed in italics indicating students from the Lawrence Scientific School:—

Courses. 1902-03.	Grad.	Sen.	Jun.	Soph.	Fresh.	Spec.	Bus- sey.	Total.
Zoölogy 1	2	12+2	20+4	31+10	41+12	5+7	1	112+35=147
" 2	2	3+1	3+2	13+10	3+2	1+2	..	25+17= 42
" 3	3	3	4+6	3+1	..	+2	..	13+9= 22
" 4	3	2	1+1	..	..	+2	..	6+3= 9
" 5	2	2	1+1	..	..	+3	..	5+4= 9
" 9	1	1	..	..	..	..	..	2 = 2
" 9a . . . . .	..	1	..	..	..	..	..	1 = 1
" 10	3	1	..	..	..	+1	..	4+1= 5
" 13	5	2	+3	1	..	+1	..	8+4= 12
" 16	4	2	+1	1+1	..	+1	..	7+3= 10
" 20	8	1+1	+2	..	..	..	..	9+3= 12
Sums	33	30+4	29+20	49+23	44+14	6+19	1	192+79=271

The following table shows in a similar way the number of students of Radcliffe College taking courses in Zoölogy:—

Courses, 1902-03.	Sen.	Jun.	Soph.	Spec.	Total.
Zoölogy 1*	2	5	3	2	12
" 2	2	3	..	..	5
" 3 . . . . .	..	..	2	..	2
Sums	4	8	5	2	19

Aside from ordinary revision, the lectures in Zoölogy 1 were the same as those given in 1901–02; but a change was made in the

laboratory exercises by devoting half an hour at the beginning of each three-hour period to a quiz on the subject matter of the exercise and a brief exposition of the work about to be entered upon.

In Zoölogy 2, given by Dr. Castle, the third optional hour for lectures was used for about half of the time. Two changes were made in the laboratory work: for the study of the clam was substituted, with noticeable advantage, that of the squid; and the study of vertebrate anatomy, hitherto pursued on the frog alone, was supplemented by the examination and drawing of typical cross sections of *Amblystoma*. It is proposed to add next year the same treatment of *Amphioxus*. A study of the metamorphosis of the frog was omitted this year. A voluntary excursion to the seashore was participated in by about one-third of the class.

Dr. Rand largely revised his lectures in Zoölogy 3, but the laboratory work was not much modified from that of the preceding year. With the assistance of the Department Janitor, Mr. M. Reitz, a beginning has been made in preparing skeletons of some of the Vertebrates studied, so that each student may have a set for study without the loss of time involved in making his own preparations. It is proposed to increase this collection till it fully meets the needs of the whole class.

The laboratory work in Zoölogy 4 was supervised by Dr. Rand, and was as usual on the leech *Glossiphonia*. There were a few lectures by Dr. Rand on the anatomy and histology of this animal; the remaining lectures were on technique, including bibliographic methods; but owing to want of time methods of reconstruction were omitted.

In Zoölogy 5 the laboratory work was on the development of the chick during the first four days of incubation, and was conducted by Dr. Rand. The lectures, by Professor Mark, covered about the same ground as in previous years.

The number of lectures in Zoölogy 9, given as usual by Professor Jackson, was somewhat increased over that of last year, the optional hour being nearly always made use of.

In Zoölogy 9a the work was chiefly on young stages of living and fossil mollusks.

The lectures in Zoölogy 10 covered the same ground as in 1900-01, when they were last given; especial attention, however, was given by Dr. Castle to questions of sex and its relation to heredity. In the second half-year the influences of chemical and physical agents on protoplasm and its activities were considered. A number of problems connected with heredity, variability, and the influence of environ-

ment have been studied by different individuals in this course, and the results of some of these researches will be published.

Zoölogy 13 was conducted by Professor Parker, and covered the same ground as in 1901-02. It is intended to broaden the course somewhat next year to include sustentative tissues, so that it will be a course in comparative histology, as was originally proposed.

As usual, special topics for investigation were assigned by Professor Parker to the students in Zoölogy 16. The topics were chiefly on sensory organs and their functions. The results of several of these studies will be published. The lectures were substantially the same as those delivered in 1901-02.

The supervision of students engaged in researches (Zoölogy 20) was divided, as proposed in the last report, among the older instructors of the department. Of the twelve students engaged in research, seven worked under the guidance of the Director, two each under Professor Parker and Dr. Castle, and one under Professor Jackson. Additional time for the research work was in a few instances gained by allowing the student to meet the laboratory requirements in some of the formal courses (Courses 10 and 16) by devoting his laboratory time to the topic of his investigation. In all cases satisfactory progress was made with the work, and the results of several of the studies are ready for publication; indeed, two preliminary papers have already been issued as Nos. 142 and 144 of the Contributions from the laboratory, — the former embodying some of the results of breeding experiments carried on for some time by Dr. Castle, or under his guidance; the latter some important histological results arrived at under the supervision of Professor Parker.

Owing to delays in the reproduction of plates, the papers by Dr. Hall, Dr. Breed, Mr. Sargent, and Mr. Lander have not appeared, but they will be published in the course of a few weeks.

In June, 1903, the degree of Doctor of Philosophy was conferred on Mr. Amos W. Peters, whose thesis was on "Metabolism and the Reaction of Division in Protozoa." Dr. Peters has been appointed Instructor in Zoölogy at the University of Illinois.

Professor Parker, besides devoting much time and energy to editorial work, has prepared two papers which have been issued as Nos. 138 and 143 of the Contributions. Dr. Castle has published two papers on an important subject, heredity, and has shared in the authorship of a third. These, too, have appeared in the Contributions, being Nos. 136, 137, and 142. It is a pleasure to note in this connection the promotion of Dr. Castle to be Assistant Professor of Zoölogy.

Dr. C. W. Prentiss, who has held for two years a Parker Fellowship, has been carrying on his studies at the Naples Station and at the University of Strassburg, and has published the following papers: "Ueber die Fibrillengitter in dem Neuropil von *Hirudo* und *Astacus* und ihre Beziehung zu den sogenannten Neuronen." *Arch. f. mikr. Anat.*, Bd. 62, pp. 592-606, Taf. 26. Juli, 1903. "The Neurofibrillar Structures in the Ganglia of the Leech and Crayfish, with especial reference to the Neurone Theory." *Jour. Comp. Neurol.*, Vol. 13, No. 3, pp. 157-175, pls. 5, 6. October, 1903. He has been appointed to a position in Adelbert College, Western Reserve University, to do the work of the Professor of Zoölogy during a year's leave of absence.

Nine instructors and advanced students carried on work at Wood's Hole during the summer of 1903, eight at the U. S. Fish Commission Laboratory, and one, as holder of a Carnegie Table, at the Marine Biological Laboratory, Wood's Hole. Of these, eight have received aid from the Humboldt Fund aggregating \$160.71.

Mr. Samuel H. Scudder has given to the department a considerable number of valuable optical, drawing, and dissecting instruments which have been used by him in his scientific work.

Through the interest and generosity of a few friends of the department, money was secured for the construction of a small number of aquaria, both for salt water and fresh water. These are each five feet long, and are located in the basement room, wholly above ground, under the zoölogical laboratories. The water, fresh as well as salt, is stored in three subterranean cisterns of concrete, holding each about fifteen hundred gallons. From these it is pumped by compressed air into wooden reservoirs, — being at the same time aerated, — whence it is led through wooden pipes to the aquaria. The overflow from the aquaria percolates through sand filters back into the cisterns. The water nowhere comes in contact with metal. The pumping is done by a one-horse-power electric motor. The planning and supervision of construction has taken much of the spare time of the Director, who has had the valuable assistance of Professor Burke of the Engineering Department.

During the latter part of April Professor Mark, in company with Professor Bristol of the University of New York, made a visit to Bermuda on the invitation of the Bermuda Natural History Society, for the purpose of gaining information as to the desirability of establishing a permanent biological station for research on the islands. The conditions appeared so favorable, and the offers of the Society so generous, that it was decided to raise money for the

equipment of a temporary laboratory. An invitation was sent out late in the spring (May) to biologists to avail themselves of the opportunity. The laboratory was opened on the 22d of June, and closed on the 21st of August. There were thirty-four persons enrolled, fourteen of whom were or had been connected with Harvard University or Radcliffe College. The others came from parts of the country as widely separated as New England, Kansas, Minnesota, and Mississippi. Two of these persons received aid amounting to \$57.86 from the income of the Humboldt Fund. Many of the collections were brought to Cambridge, and the results of the investigations will be published in various journals.

The meetings of the Zoölogical Club were held on Monday afternoons throughout the year. The average attendance was between seventeen and eighteen. The papers read and topics discussed were announced in the University Calendar.

CONTRIBUTIONS FROM THE ZOÖLOGICAL LABORATORY FOR THE ACADEMIC YEAR 1902-03.

135. STRONG, R. M. — The Development of Color in the Definitive Feather. *Bull. Mus. Comp. Zoöl.*, Vol. 40, No. 3, pp. 145-185. 9 pls. October, 1902.
136. CASTLE, W. E. — Mendel's Law of Heredity. *Proc. Amer. Acad. Arts and Sciences*, Vol. 38, No. 18, pp. 533-548. January, 1903.
137. CASTLE, W. E. — The Heredity of Sex. *Bull. Mus. Comp. Zoöl.*, Vol. 40, No. 4, pp. 187-218. January, 1903.
138. PARKER, G. H. — The Optic Chiasma in Teleosts and its Bearing on the Asymmetry of the Heterosomata (Flat Fishes). *Bull. Mus. Comp. Zoöl.*, Vol. 40, No. 5, pp. 219-242. 1 pl. January, 1903.
139. MARK, E. L. — A Paraffine Bath heated by Electricity. *Amer. Nat.*, Vol. 37, No. 434, pp. 115-119. 3 figs. February, 1903.
140. ADAMS, G. P. — On the Negative and Positive Phototropism of the Earthworm *Allolobophora foetida* (Sav.) as determined by Light of Different Intensities. *Amer. Jour. of Physiol.*, Vol. 9, No. 1, pp. 26-34. 2 figs. March, 1903.
141. PRENTISS, C. W. — Polydactylism in Man and the Domestic Animals, with especial Reference to Digital Variations in Swine. *Bull. Mus. Comp. Zoöl.*, Vol. 40, No. 6, pp. 243-314. 22 pls. and 26 figs. April, 1903.
142. CASTLE, W. E., and ALLEN, G. M. — The Heredity of Albinism. *Proc. Amer. Acad. Arts and Sciences*, Vol. 38, No. 21, pp. 601-622. April, 1903.

E. L. MARK, *Director.*

DEPARTMENT OF GEOLOGY AND GEOGRAPHY.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR, — As Chairman of the Department of Geology and Geography, I have the honor to submit the following report for the year 1902-03.

The only changes of note in the instruction given during the year 1902-03, as compared with that of the preceding year, were the addition of a new whole course in Palaeontology (Geology 11), given by Professor R. T. Jackson, which replaces the half-course in Palaeontology formerly designated as Geology 14a, and the addition of a new research course in Climatology (Geology 26), given by Professor Ward.

Five summer courses in Geology and Geography were given in 1903. The elementary course in Geology (S1) was in charge of Professor J. E. Woodman, of Dalhousie College, Halifax, N. S., a Harvard Ph.D. in Geology, and formerly Assistant in Geology at Harvard. Professor Shaler gave several lectures in this course. The number of students was twenty-one.

Geology S2, an advanced summer field course, was conducted by Professor Woodworth in the regions at Utica and Catskill, N. Y., and Meriden, Conn. The course was taken by four students. Mr. H. O. Whitnall, Instructor in Geology at Colgate University, gave valuable assistance to the party in the work in New York State. Professor Woodworth made, for the Geological Laboratory, a collection of trimmed hand specimens of the strata passed over.

In Geology S3, a course in advanced field work, instruction was given by several officers of the Division, one student being regularly enrolled.

Particular attention deserves to be called to the new summer course of Geological Field Work in the Rocky Mountain Region, which was given for the first time during the past summer by Mr. C. H. White, Instructor in Mining. The course was taken by thirteen students, of whom seven were students in Harvard University, two being graduates. Of the remaining six, two were instructors in Geology in other colleges; two were graduate, and two undergraduate, students in other colleges. Five weeks were spent in the high mountains of southwestern Colorado (San Juan Mountains).

During half of this period the camp was at an elevation of more than 11,500 feet. It is a great satisfaction to be able to report that there was no sickness or accident during the five weeks of the course. Upwards of 100 square miles were studied in detail, and mapped, and many hundreds of miles were observed in reconnaissance.

The usual summer course in Elementary Physiography, attended by forty-one students, was given by Mr. Henry T. Burr, now of the State Normal School, New Britain, Conn., formerly an Assistant in the Department, and Mr. F. M. Wilder.

After one full year's use of the spacious and convenient laboratories and lecture rooms in the new southwest corner-piece of the Museum, the hope of the officers of the Department, that their own work and that of their students would, under the new conditions, be done more effectually and more systematically than before, has been fully realized. The statement made in last year's Report can but be repeated, with added emphasis, that it is impossible to overestimate the value to this Department of the new wing of the Museum.

In the course of the year the large model of Boston, deposited in the Museum by the Commonwealth of Massachusetts, was fitted with a plate-glass case and was opened to the public on May 1st, in the new Geological Exhibition rooms, as the nucleus of a geological collection. Other objects secured for the Museum are a valuable collection of relics from the ruined city of St. Pierre, in Martinique, and a large suite of specimens from the Caribbee Islands, collected by Professor Jaggar. The Department now has in hand a comprehensive plan for the proposed geological and geographical exhibits.

In November and December, 1902, four illustrated public lectures were given in the new Geological Lecture Room by Professors Davis, Wolff, Ward, and Dr. Jaggar, and in July, 1903, during the convention of the National Educational Association, the laboratories of Geology, Physiography, and Meteorology were opened to all who wished to inspect the teaching equipment and facilities. Two public lectures were also given at that time by Professors Woodworth and Ward.

Professor Shaler gave his courses along the same lines as in previous years.

The instruction given by Professor Davis has, as during recent years, consisted of a whole course in advanced Physiography and a half-course of intermediate grade. The latter was upon the United States, in which the laboratory work on charts, maps, and folios was, with the assistance of Mr. Read, developed to a much more satisfactory stage than heretofore. In the advanced course the principal

problems discussed were : Piedmont fluviatile plains, the meanders of the Mississippi, the geographic features of extinct glacial lakes, the movement of sands on beaches, the principles of regional physiography, and outlines for practical laboratory exercises. During the autumn and early winter a good share of time was given to the preparation of two reports on the work of the previous summer in Utah, Arizona, Nevada, and Oregon, one of which has been published in the Museum Bulletin, the other of which is in press. The former is chiefly concerned with the faults by which the plateaus of southern Utah and northern Arizona are divided. The latter is a discussion of the Basin range problem, to which renewed attention has been recently turned. At the same time, supervision was given to the special report on the Hurricane fault of the Toquerville district of southern Utah by Messrs. Huntington and Goldthwait, who accompanied Professor Davis in his western excursion. A short excursion was made in November to Mt. Mitchell and the Blue Ridge in North Carolina, with special consideration of the Blue Ridge as a retreating escarpment, the results of which have been published by the Geographical Society of Philadelphia.

A certain share of time was given to the organization of the Harvard Travellers Club, with the object of bringing together Harvard students and graduates and others interested in the promotion of intelligent travel and exploration. The plan met with an encouraging response, and the Club seems to be assured of steady growth. It numbers at present about one hundred members.

On April 17, Professor Davis left Cambridge, accompanied by Mr. Ellsworth Huntington as Carnegie Research Assistant, to proceed by the way of Constantinople and Baku, to Turkestan, where he was to investigate geologic and physiographic problems as a member of Professor Raphael Pumpelly's Carnegie Expedition. The journey was successful in every way. The subjects examined included the elevated shore lines of the Caspian Sea, the fluviatile plains of Turkestan, and the terraces and glacial deposits among the western ranges of the Tian Shan system as far as Lake Issikkul. Professor Davis returned via Semipalatinsk, Omsk, and St. Petersburg, reaching home August 28. Mr. Huntington turned south from Issikkul late in July, and near the end of August reached Kashgar, whence he will turn westward to Samarkand.

Professor Jackson reports that the collections used in teaching are in good condition. A number of new diagrams were mounted and photographic diagrams were added to those already in use for teaching. Mr. Laurence LaForge gave a considerable number of fossils

from the New York Devonian, especially the Chemung group. A large number of fossils were purchased from Ward, of Rochester, to fill gaps in the teaching collections. In July and August Professor Jackson spent some weeks collecting in the Devonian and Carboniferous rocks of Michigan.

Professor Ward gave the usual courses in Meteorology and in Climatology, and also a new research course in Climatology (Geology 26). In the latter, Mr. W. S. Tower took as his subject "Climate and Man in the Philippines." A part of Mr. Tower's thesis has been published in the *Bulletin of the American Geographical Society* (Vol. XXXV, pp. 253-260). The purchase of thirty sling psychrometers made it possible for the first time to give the class in Elementary Meteorology some actual observational work. The results of this innovation were most satisfactory, and emphasize the need of introducing more instrumental work in this course as rapidly as possible. Sixteen sets of mounted weather maps of recent date have also added greatly to the interest of the laboratory work in Geology B. Professor Ward was occupied for some months with the proof of his translation of Hann's *Handbuch der Klimatologie*, which was published in April, 1903. During the second half-year Professor Ward gave a course of thirty lectures on Meteorology to students of the Institute of Technology.

Professor Woodworth reports that during the year there were added by purchase to the equipment of the laboratory in his charge, a collection of New York State rocks, representing the various horizons of the Palaeozoic column there developed; several rocks and minerals to fill gaps in the study series; a set of wall maps of the continents; and for field work a small plane-table and alidade. Every case in the section of the new building is now in working order, and a catalogue is under way, designed to facilitate reference to any desired object, including the maps and specimens. Mr. P. S. Smith during the year completed the numbering and cataloguing of the geological maps in Room 23, and materially advanced the same work upon the rock collections. A few gifts of interest have been received, notably a collection of apparently sand-blasted pebbles from the Keweenaw conglomerate of the Lake Superior district, from Mr. C. H. White.

Professor Woodworth under the auspices of the New York State Museum continued during the year, as time permitted, his investigation of the pleistocene geology of the Hudson and Champlain valleys. He also spent three days on Long Island, N. Y., for the U. S. Geological Survey. A paper on the terminal sedentary impressions of the trails known as Climactichnites, found near West Chazy, N. Y.,

has been published. As a result of last summer's field work a pleistocene map of the Mooers Quadrangle in Clinton County, N. Y., has been nearly completed. In the April recess, Mr. Goldthwait, as assistant to Professor Woodworth, began for the New York State Museum a re-mapping of the pleistocene deposits about New York City. One student from the Institute of Technology was given instruction in Glacial Geology.

As chairman of the committee on the Gardner Collection of Photographs (Professors Woodworth and Ward, and Mr. Read), Professor Woodworth reports that, thanks to the efficient help of Mr. P. S. Smith, the collection of photographs and slides is at the end of this year for the first time in a satisfactory condition as regards the classification of the material, and the registration of the data concerning it. The following statement has been compiled by Mr. Smith for this report: —

State of the Gardner Collection June 1, 1903.	Photographs.	Lantern slides.	Negatives.
Accessions since last report	76	325	0
Catalogued since last report	1,450	2,462	0
Unidentified views on hand	253	29	
Duplicates	144	49	
Broken . . . . .	..	3	0
Condemned for various reasons	23	3	0
Last accession No., June 1st	5,650	3,836	
No. of views in collection	5,483	3,780	1,064

The large number of views catalogued during the year represents an accumulation for some years of views concerning which information was not obtained at the time they were acquired. Mr. Smith has worked out the desired information, leaving a very small proportion of unidentified views. The larger proportion of slides than photographs acquired during the year expresses the present policy of the Department concerning purchases, since it has been found that the slides alone furnish suitable illustrative material for our large classes. The duplicates consist in the main of presentation copies, or of views which have been intentionally duplicated. The negatives belonging to the collection are very largely those used in making lantern slides, and most of them are copied from photographs or from drawings. On April 8th, an exhibition of over 150 Norwegian photographs was made before the American Academy of Arts and Sciences in the rooms of the Museum. There has been no public

exhibition of the collection during the year. The committee is very desirous of securing some means of regularly exhibiting certain parts of the collection to the public.

Professor T. A. Jaggar continued his work in charge of the advanced field course in Geology and a half-course in Experimental Geology. Geology 22 was attended by fifteen students, who completed surveys, in the autumn, of the southern part of the Lawrence Quadrangle, and the eastern part of the Framingham Quadrangle. During the second half-year this class investigated the complex problems of the region about High Rock, in Melrose, one division of the class completing a large-scale topographic map, and inscribing thereon the geology. Mr. LaForge rendered efficient assistance in this work, and completed a thesis on the Geology of Somerville, Mass., which was presented on June 1st, for the degree of Doctor of Philosophy. He was assigned to field work in New Jersey, as U. S. Assistant Geologist, for the summer of 1903. Special studies of large areas in the vicinity of Boston were made by Messrs. D. C. Bard and F. M. Wilder. Mr. Bard made a reconnaissance geological map of portions of the Lowell and Lawrence Quadrangles, and Mr. Wilder, of the Framingham Quadrangle. These studies are preparatory to more elaborate work by future classes. In collaboration with Professor Crosby, of the Massachusetts Institute of Technology, arrangements were made with the U. S. Geological Survey, whereby Professor Crosby and Professor Jaggar will jointly produce a Boston City folio showing the geology of the Metropolitan District of Boston. Professor Jaggar gave instruction in the Massachusetts Institute of Technology in general, field, and experimental geology. Three students from the Institute joined the Harvard class in experimental geology in the spring, and two of these carried on advanced field work in the Middlesex Fells. In February, Professor Jaggar gave a course of six lectures at the Lowell Institute on the "Caribbean Volcanic Eruptions and their bearing on Vulcanology." During the summer he completed, in coöperation with Professor Palache, the folio of the Bradshaw Mountains, Arizona, for the U. S. Geological Survey. He further finished for publication two papers on the Caribbean volcanoes, now in press.

Mr. Read gave the course in Elementary Physiography to seventy-three students. He also acted as assistant in Courses 6 and 14, and gave a course of thirty lectures on Physiography to students of the Institute of Technology.

The following publications by officers and students of the Department were issued during the year:—

By W. M. DAVIS:—

An Excursion to the Plateau Province of Utah and Arizona. *Bull. Mus. Comp. Zool.*, XLII, 1903, pp. 1-50, 7 pls.

The Stream Contest along the Blue Ridge. *Bull. Geogr. Soc.*, Philadelphia, 1903, pp. 213-244, 4 pls.

The Development of River Meanders. *Geol. Mag.* (London), Decade IV, Vol. X, 1903, pp. 145-148.

Current Notes on Physiography. In *Science*.

By R. DEC. WARD:—

Relative Humidity of our Houses in Winter. *Journ. Geogr.*, I, 1902, pp. 310-317.

A Year of Weather and Trade in the United States. *Pop. Sci. Mo.*, 1902, pp. 439-448.

Irisirende Wolken. *Meteorologische Zeitschrift*, XIX, 1902, pp. 437-438.

The Climate of South America. *Encyc. Brit.*, New Vols., XXV, pp. 370-373, London, 1902.

Translation of Julius Hann's *Handbuch der Klimatologie*. Vol. I, 8vo, pp. xiv + 437. New York and London. The Macmillan Co., 1903.

Current Notes on Meteorology. *Science* (throughout the year).

Notes on Climatology. *Bull. Amer. Geogr. Soc.* (throughout the year).

Reviews in *Science*, *Bull. Amer. Geogr. Soc.*, *Journal of Geography*, *Harvard Graduates' Magazine*.

By J. B. WOODWORTH:—

The Northumberland Volcanic Plug. *Twenty-first Annual Report of the N. Y. State Geologist*, 1901. Albany, 1903, pp. r 17-r 24, with plates and a geologic map.

On the Sedentary Impression of the Animal whose Trail is known as Climactichnites. *N. Y. State Museum Bull.*, Sixty-ninth Report of the State Palaeontologist, 1902, pp. 959-966, 2 pls.

Note on the Elevated Beaches at Cape Ann, Mass. *Bull. Mus. Comp. Zool.*, Vol. XLII, 1903, pp. 191-194.

By T. A. JAGGAR:—

The Crater of the Soufrière Volcano, St. Vincent. *Harper's Weekly*, September 13, 1902, Vol. XLVI, No. 2386.

Mt. Pelée's Renewed Activity. *Boston Transcript*, September 3, 1902.

The Next Eruption of Pelée. *Science* (N. S.), Vol. XVI, No. 413, 1902.

Professor Heilprin on Mt. Pelée. *Science* (N. S.), Vol. XVII, No. 428, 1903.

By J. A. CUSHMAN:—

Studies of Localized Stages of Growth in some common New England Plants. *Am. Nat.*, Vol. XXXVI, No. 431, pp. 865-885.

Studies of Localization in some Plants of the Botanic Garden of Harvard University. *Am. Nat.*, Vol. XXXVII, No. 436, pp. 243-259.

By E. HUNTINGTON and J. W. GOLDTHWAIT: —

The Hurricane Fault in Southwestern Utah. *Journ. Geol.*, XI, 1903, pp. 46-63.

By R. M. BROWN: —

The Mississippi River from Cape Girardeau to the Head of the Passes. *Bull. Amer. Geogr. Soc.*, XXXV, 1903, pp. 8-16.

By W. S. TOWER: —

The Climate of the Philippines. *Bull. Amer. Geogr. Soc.*, XXXV, 1903, pp. 253-260.

ROBERT DE C. WARD, *Chairman.*

MINERALOGICAL MUSEUM AND LABORATORIES OF MINERALOGY AND PETROGRAPHY.

TO THE PRESIDENT OF THE UNIVERSITY :—

SIR, — The courses in Mineralogy and Petrography have been well attended in 1902–03, and the equipment for teaching has been improved in several respects : for instance, a double electric stereopticon has been placed in the lecture room, by which the great Nicol prisms belonging to the department can be used to illustrate optical mineralogy, and at the same time ordinary lantern slides can be shown.

The Museum has received an unusually large number of gifts of mineral specimens, besides acquiring some excellent specimens by purchase to the extent of our limited means. Miss Maria Whitney presented the elaborate blow-pipe outfit belonging to the late Professor J. D. Whitney ; Mr. L. M. Prindle (formerly connected with the department), eight aqua-marine crystals from Grafton, N. H. ; The Ashland Emery and Corundum Co. sent a large and very valuable specimen of diaspore from Chester, Mass., one of the finest specimens ever found at that locality ; Messrs. L. W. Jenkins and Thomas Clark, gold specimens from California ; Mr. Emanuel Lissner, quartz from the Daly-West mine. The Museum purchased a large cavity containing millerite crystals, a complete set of the wonderful red tourmalines and pink spodumene from San Diego County, Cal., and some minor specimens. All of these have been placed on exhibition. A new departure was made in 1903, by attempting to obtain minerals by actual work at a locality. This was possible through the interest of Mr. F. M. Kilmer, a student in mineralogy, and of his father, part owner of the famous mineral locality at Auburn, Me. While the attempt was unsuccessful for the time being, the few blasts made failing to uncover a “ pocket ” of minerals, yet this method of making acquisitions at first hand is promising.

These evidences of interest in our collection from widely scattered sources suggest a consideration of what can be done to increase the effectiveness of their display to the public. It seems to me that the most pressing question is that of adequate illumination of the exhibition room. The majority of the specimens are from their nature small and dull-colored, and require the best light for proper display, while the room covers the entire floor of the building, with

windows only at each side; in the centre of the room it is consequently impossible to see details clearly even on a bright day, especially as the direct sunlight is destructive to minerals, and the shades must be partly closed; on dark days and late in the afternoon, the whole room is insufficiently lighted. A strong artificial light, as nearly pure white as possible, such as is given by the Nernst or arc lamp, is the remedy, and some preliminary experiments have shown the surprising effectiveness of this means. It needs the most careful study to determine the best system, and especially whether the cost of current, even with the most careful use, would not be prohibitive.

Professor Palache has carried on with Mr. Fraprie a study of Babingtonite, and, with Mr. Wood, of the Millerite of Orford, Canada. He conducted the summer school of Mineralogy in 1903 at the University of California.

I have been engaged in preparing for publication a large amount of accumulated material, mainly petrographical and geological, and gave the whole summer of 1903 to that work.

The following papers have been published: —

(1) Babingtonite from Somerville, Mass.; (2) Babingtonite from Athol, Mass. By CHARLES PALACHE and F. R. FRAPRIE. *Proc. Am. Acad.*, Vol. XXVIII, No. 11.

JOHN E. WOLFF, *Curator*.

THE PEABODY MUSEUM OF AMERICAN ARCHAEOLOGY AND ETHNOLOGY.

TO THE PRESIDENT OF THE UNIVERSITY :—

SIR,— At the time of the inception of the Semitic Museum, in 1889, the Trustees of the Peabody Museum coöperated with the generous founder of the Semitic Museum by granting the temporary use of one of the galleries in the Peabody Museum for the exhibition of the Semitic collection as it was being formed. When the Semitic collection was safely housed in its permanent home, in December, 1902, we immediately proceeded to adapt the gallery to our own use, and to make a systematic arrangement of our ethnological material in continuation of the exhibit in the hall below. The collections in the hall and gallery are now so arranged as to bring together objects pertaining to the tribes of each linguistic family of North American Indians and Eskimo, and to show the costumes, arts, utensils, weapons, boats, habitations, and everything that the Museum has been able to secure to illustrate the life and customs of each tribe. One of the striking features of this exhibit is the fine display of basketry, in several tribal exhibits. In connection with this arrangement, Mr. Willoughby has made a life size model of a Sioux Indian which, dressed in native costume, stands in one of the wall cases in the hall. By persistent effort Mr. Willoughby has secured, from our collection and from various other sources, authentic portraits of Indians of many tribes, as well as pictures showing characteristic occupations and typical habitations. By grouping these photographs in special frames on the walls between the windows, he has made a photographic representation of the principal types or linguistic families represented by the collections. This pictorial exhibit of native peoples is instructive and unique.

The moving of the Eskimo and Alaskan collections from the Warren Gallery to the gallery formerly occupied by the Semitic collection made it possible, by the construction of two new alcove cases, to rearrange the foreign ethnological collections to which the Warren Gallery is now entirely devoted. The photographic representation of native peoples of Africa, Asia, and the Pacific Islands has been carried out also in this gallery. Mr. Willoughby has made an instructive grouping and artistic arrangement of these ethnological exhibits.

By the expenditure of \$1,221.62 for new cases and for alterations on the old ones, we have been able to place valuable ethnological material in safety and to put on exhibition hundreds of ethnological specimens that for many years have been in storage. We have also been able to incorporate into our collections the invaluable material received three years ago from the Boston Museum. In order to complete this work it has been necessary to draw on our income for next year, but this has seemed essential on account of the perishable nature of the older ethnological specimens in which the Museum is especially rich. Several of these objects were collected in the last part of the Seventeenth Century, and many in the Eighteenth Century and the early part of the Nineteenth Century. So great has been the change in the life and customs of nearly all native peoples during the last fifty years that these objects of old times are of priceless value and cannot be duplicated. That we were able to secure so many of these rare old objects is largely due to persistent efforts to concentrate in this Museum the archaeological and ethnological material in danger of destruction, from lack of room and care, in the older institutions of Boston and vicinity. In this way the Peabody Museum has been made the depository of invaluable collections from the Boston Marine Society, the Massachusetts Historical Society, the Boston Athenaeum, the Boston Society of Natural History, the American Antiquarian Society, the American Academy of Arts and Sciences, and the Boston Museum.* During the past year the Boston Museum of Fine Arts has begun to transfer to the Peabody Museum such archaeological and ethnological material as, from its bearing on the early life of man, finds a more appropriate place in a general anthropological museum than in an art museum.

Notwithstanding the additional gallery made available during the past year, the collections are still crowded. Stacked in trays in basement and attic and in storage in cupboards under the cases are many archaeological collections which, could they be brought into the geographical sequence, the proper system of arrangement for archaeological and ethnological collections, would add very much to the usefulness of the Museum to students, and to its attractiveness to visitors. This cannot be done until the completion of the Museum Building. I allude to the subject not only to account for certain


* In the collection received from the Boston Museum are several specimens that were in the once famous Peale Museum of Philadelphia; others from the Lewis and Clark expedition; and a number obtained by Catlin. A Massachusetts Indian bow, the only one in existence and dating from 1665, was received from the American Antiquarian Society.

gaps in the exhibits, but also to make one more earnest appeal for the one hundred and fifty thousand dollars required to complete the Anthropological Section of the University Museum Building.

The important explorations in Central America and the publication of results have been continued, thanks to a few friends of the Museum, who generously contribute each year to the Central American-Mexican Subscription Fund. This fund is managed by a special committee of the Museum Faculty and does not appear on the books of the Treasurer. Mr. Maler's work in the field has been continued, and the report on his latest explorations in the Usumacinta Valley was published in March as the second and concluding part of Vol. II of the Peabody Museum Memoirs. This volume treats of the archaeology of the Usumacinta Valley, with brief references to the Lacandon Indians of that region. It comprises over two hundred quarto pages of text, a full index, two maps, and seventy-eight heliotype plates of the ruins and sculptures.

Mr. E. H. Thompson has continued his archaeological studies in Yucatan. His report on Xul, Tzulá, and Chacmultun, and on the Mural Paintings of Tzulá and Chacmultun, will be printed during the coming year. This memoir will be made specially interesting by the reproduction in colors of several mural paintings. We have received from Mr. Thompson a series of photographs showing the walls and sculptures of the north and south temples of the so-called Tennis Court of Chichen-Itza.

Mr. A. M. Tozzer, who holds the American Fellowship in the Archaeological Institute of America and is a student in the Division of Anthropology in the University, has continued his researches in the Maya-Quiche language as spoken by the Lacandones of Chiapas, Mexico, and the Upper Usumacinta River. In the language of the Mayas and Lacandones he finds only a slight dialectical difference, while in the life and customs of the two groups he finds a striking instance of the effect of Spanish contact upon a portion of this once homogeneous people. The Mayas of Yucatan have been modified by intimate contact with the Spanish since the time of the Conquest; but the Lacandones, being free from Spanish-Mexican contact, have remained in their native state. Living in a small settlement of Lacandones, Mr. Tozzer succeeded in winning the confidence and good will of this secluded people to such an extent that he was able to study their language and customs under exceptionally favorable conditions. The ethnological specimens which Mr. Tozzer secured while among these Indians have been placed in the Peabody Museum by agreement of the Archaeological Institute. Mr. Tozzer is now a



candidate for the Ph.D. degree, and has presented a thesis on "A Comparative Study of the Mayas and Lacandones." He will return to Yucatan at the close of the year to continue his studies.

Mr. G. B. Gordon, who for several years has been connected with the Museum as field director of the explorations in Honduras* and as Assistant in Central American Archaeology, was last year Hemenway Fellow and a candidate for the S.D. degree in this division of the University. Mr. Gordon presented a thesis on "The Serpent Motive in the Art of Central America and Mexico," and received his degree last June.† On September 1st he accepted an appointment as Assistant Curator in the Free Museum of Science and Art, University of Pennsylvania.

For some time I have known of a site on the Cattaraugus reservation in New York State which Iroquois tradition designates as a former village site of the little known Erie Indians. Fortunately we were able, during the past summer, to secure the services of Messrs. M. R. Harrington and A. S. Parker, young men whom I had trained in archaeological work in connection with the American Museum of Natural History. With the aid of the income of the Henry C. Warren Fund a careful exploration of a portion of the site was made, with most satisfactory results. From the graves explored we received several skeletons and a fine lot of pottery vessels, also characteristic pipes, stone and bone implements, ornaments, and many other objects. Mr. Harrington is now preparing a detailed report on the exploration, and when this is received and the collection is arranged the results of this important exploration will be made known. While the young men were on the Cattaraugus reservation they secured from the Indians a small ethnological collection. Mr. Harrington has written an account of, and made a special collection to illustrate, the Indian method of preparing corn and beans for food. This collection includes the various mortars, baskets, mush-paddles, ladles, etc., made and used by the Indians. Mr. Harrington also secured several masks and other paraphernalia of the "False Face Society," and Mr. Parker, who is an Iroquois and a member of the society, has written an account of this Indian society.

Mr. D. I. Bushnell, Jr., has made a restoration of a stone grave, with its contents, which was obtained during the expedition to Missouri last year. This stone grave has been placed in the hall near

* Several reports by Mr. Gordon on the results of the Museum expeditions in Honduras are published in Vol. I of the Museum Memoirs.

† This is the first time the doctor's degree has been given in this division to a graduate of the Lawrence Scientific School.

the collections from Missouri, and is a good illustration of the well-known "stone graves" of the region. This particular grave was evidently used for the reburial of bones belonging to two skeletons, with which was placed a characteristic bowl of the pottery of the region. Mr. Bushnell is now preparing the report on the explorations at Kimmswick for the University of California and for this Museum. He has also prepared a general account of the Cahokia Mound group to accompany the model of the group which he made for the Museum over a year ago. This account will be published in our series of octavo papers.

A number of valuable specimens were secured during the year by the appropriation of \$1,386.20 from the income of the Huntington-Frothingham-Wolcott Fund, — a fund that is very helpful to the Museum, as exemplified by the important collections and costly specimens which have been secured by the expenditure of its income from time to time.

The income of the Susan C. Warren Fund has been applied toward the expense of the new cases in the Warren Gallery, and for special cases for the models of the Cahokia Mound Group and the Navajo Sand Painting. It will be recalled that several years ago Mrs. Warren generously gave the money for the construction of the cases in the Warren Ethnological Gallery.

By gift of Miss Mary L. Ware we have received the Niven collection of human crania, pottery, and stone implements, from the ancient ruins in the state of Guerrero, Mexico, — an important addition to our exhibit of Mexican archaeology.

Mr. Lewis H. Farlow of Boston has continued his gifts to the Museum, and we have received the following from him during the year: Ute and Sioux cradles, a Sioux bag and necklace, Zuñi tihus, fetiches and necklaces, Moki dance kilt and carrying pad, photographs of Zuñi and Moki ceremonials, a Nez Percé wallet, a Pottawatomi beaded pouch, and forty-three baskets from fourteen tribes. Many of these baskets are fine old examples of the best work and make a valuable addition to the collection of basketry for which we are specially indebted to Mr. Farlow and his sister, Mrs. Linder.

To other friends of the Museum we are indebted for the following gifts: —

Dr. H. H. Miller of Philadelphia has given us fifteen Ainu photographs taken by himself; Mrs. George Linder of Boston, ten miniature figures illustrating people of India, their dress and customs, also a model of a buffalo cart, and a model of cart with canopy drawn by sacred white buffalos, from India; Mr. Henry B. Bigelow (Harvard

1904) of Cohasset, a kayak from Labrador; Mr. Robert Parkman Blake (Harvard 1894) of Boston, a three-hatch bidarka with paddles, and a native skin shirt or *kamenka* collected by him while at Kadiak Island, Alaska; Mr. George S. Pitcher of Boston, a small model of the Mexican Calendar Stone; Mr. David Wagstaff (Harvard 1905), a Sioux tobacco pouch ornamented with quill and bead work, collected by Mr. C. D. B. Wagstaff in 1870, and a ceremonial staff from New Zealand, collected in 1820; Mrs. Lee Hoffman of Portland, Oregon, several baskets from the Klamath and Warm Springs Indians, and an Indian hat from British Columbia; Mr. Frank A. Gardner of Salem, a photograph of a wooden spoon taken from an Indian killed by Captain John Gardner at the battle of Haverhill, August 27, 1708; Miss Mary H. Loring of Boston, two Korean mats; Mr. John Daniels (Harvard 1904), an Eskimo kayak, four Eskimo wallets, six pieces of basketry, small Eskimo carvings, a pair of snowshoes, from Labrador, collected during the Glazier Expedition in 1902; Mrs. Asa Gray of Cambridge, an ancient pueblo vase from the Chaco Cañon, New Mexico, a large Papago basket, two birch bark boxes with quill work from the Ojibwa Indians of Lake Superior, collected in 1848, six Nubian baskets collected by Professor and Mrs. Gray in 1869; Mr. Augustus P. Loring (Harvard 1878) of Boston, an old Navajo carrying basket; Dr. F. C. Shattuck (Harvard 1868) of Boston, a Kaffir vase; Mrs. Charles J. Bowen of Boston, beads from a mound on the Ashley River, S. C., collected in 1846; Mr. F. A. Golder, fragment of carved slate from Shumagin Island, Alaska; from a friend, a set of Professor Starr's portraits of Indians of Southern Mexico; Dr. John W. Farlow of Boston, a collection of Kaffir objects from near Natal, Africa; Dr. L. C. Jones (Harvard 1887) of Malden, several terra cotta objects dug up in a garden near Rome, and a pottery bowl from a ruin in New Mexico; Mrs. E. J. McNeil of Cambridge (through Miss Mead), an ancient birch bark box ornamented with spruce root wrappings and porcupine quill work, from the Micmacs of Nova Scotia; Miss Nellie M. Betteley of Cambridge (through Miss Mead), an ancient Algonkin birch bark box ornamented with spruce root wrappings and porcupine quill work; Mr. Clarence B. Moore (Harvard 1873) of Philadelphia, pottery vessels from several mounds on the west coast of Florida; Mr. T. H. Thomas (Harvard 1903), three photographic negatives of the skull of Sleepy Eyes, a Sioux chief who took part in the Sioux uprising of 1863; Mr. L. W. Jenkins of Salem, photographs of Tarahumara Indians of Mexico; Mr. Hubert Vos of New York, photographs of portraits, painted by Mr. Vos, of types of Chinese, Thibetan, Sikh,

Punjantic, and Javanese peoples; Mr. Teobert Maler of Merida, Yucatan, a small human figure (original of Fig. 33, Vol. II, Memoirs of Peabody Museum) of chlorite-serpentine schist, from Budsilha, Chiapas, Mexico; Mr. David P. Kimball (Harvard 1856) of Boston, two Egyptian mummies in cases, formerly in the Boston Museum; Mr. L. Warner (Harvard 1903), bear totem in stone found on the Klamath Reservation, Oregon; Professor S. P. Sharples (Harvard 1866) of Cambridge, basket and material showing methods of making from palm-leaves, Cayman Island, W. I.; Mr. Seton-Karr of Wimbledon, England, fourteen paleolithic implements from near Madras, India, and ten from Somaliland, East Africa; Mrs. Pierce of Merida, Yucatan (through Mr. Tozzer), a Maya comb and a Maya chocolate pitcher, both made of wood; Mr. H. N. Rust of Pasadena, a copy on cloth of Lone Dog's winter count covering the years 1800 to 1870; Judge James Wickersham of Tacoma, two pottery vessels from an ancient igloo site, Cape Prince of Wales; Mr. Alfred P. Maudslay of London, a large number of folio plates from his work on Central American Archaeology; Dr. James P. Kimball of New York, a stone pendant found by Mr. Russell Kimball in 1884 in the garden of estate No. 16 Lowell Street, Cambridge; the Curator, a native mask from New Ireland and an Eskimo bone snow knife with etched figures from Alaska; The Boston Society of Natural History, Archaeological specimens from several localities in Massachusetts, Maine, and Florida; The Peabody Museum of Yale University, a cast of the skull of *Pithecanthropus erectus*; The Boston Museum of Fine Arts, a collection of objects of pottery, bronze and iron from Armenian graves, collected by H. de Morgan in 1888.

From a friend of the Museum the library has received generous gifts, including a full set of the Egypt Exploration Fund publications, eleven bound volumes of *Globus*, 1897-1902, and forty-two bound volumes of "Coleccion de Documentos ineditos de America," published in Madrid, 1864-84. The Duke of Loubat has sent us the two large quarto parts of Dr. E. Seler's study and elucidation of the "Codex Vaticanus, No. 3773," Berlin, 1902, and also an English translation of the same, 1902-03. These, like the facsimile reproduction of this Vatican Codex issued in 1896, were published under the patronage of the Duke. He has also sent us two volumes of "Decades Americanae," by E. T. Hamy, and several pamphlets. Mr. C. B. Moore has given to the library, and to each scientific assistant, copies of his two Memoirs published during the year on the northwest and west coast of Florida. These memoirs, of which fifteen, in nine parts, have been issued by Mr. Moore, make known

for the first time the archaeology of the southern coast from South Carolina and Georgia around Florida to Alabama, and form a monumental work in American archaeology. Mr. A. M. Tozzer (Harvard 1900) has given us a copy of "*Gramatica Maya escrita por M. Zavala*"; and Professor M. H. Saville has given a copy of "*Vocabulario Manual de las lenguas Castelana y Mexicana*."

Including the above and other gifts, exchanges, and a few acquisitions by purchase, the library has received additions, during the year, amounting to 157 volumes and 141 pamphlets. We are now gradually transferring to other departments or to Gore Hall such books as are rarely consulted in the Peabody Museum, thus keeping the department library strictly anthropological, with the exception of a few volumes on other subjects needed for general reference.

At the beginning of the last college year, Dr. Frank Russell resumed his duties as Instructor in Anthropology after a year of absence. He devoted himself to his work with his former earnestness and carried on his several courses until the close of the college year, when he felt compelled to resign his position and start for Arizona. Here he planned to take up a homestead, and in July a letter was received from him in which he cheerfully referred to digging irrigation ditches and making a home for his family. On November 7 a telegram was received from Mrs. Russell, stating that Dr. Russell died that morning. Dr. Russell came to Harvard from the University of Iowa in 1895 and entered the Senior class. In 1896 he took the degree of A.B. In the following year he received the degree of A.M. for studies in the division of American Archaeology and Ethnology; and in 1898 he received the degree of Ph.D. in the same division. He was thus the second man to take the degree since the establishment of the division. During the years 1896-98 he held the Hemenway Fellowship. In 1896 he was made Assistant in Anthropology and aided in the courses of instruction. In 1897 he was appointed Instructor in Anthropology, and the following year was reappointed without limit of time and made a member of the Faculty of Arts and Sciences. During the year of his absence he was employed in archaeological and ethnological work in Arizona for the U. S. Bureau of American Ethnology, and in this connection he has prepared an extensive report on the Pima Indians. He had previously made a study of the Apache language during a summer trip when he did some archaeological work for the Museum. Dr. Russell's power of endurance and his persistence were shown during his trip under the auspices of the State University of Iowa in 1892-94, when at the age of twenty-four he made the journey from

the Great Salt Lake down the Mackenzie River to Herschel Island in the Arctic Sea. It was during this expedition that he became interested in the study of the Indians. By the death of Dr. Russell we have lost a valuable teacher, and the science of anthropology has lost a devoted student whose conscientious work has aided its advancement.

It is my sad duty to record another premature death among our number—that of one of the most promising students in anthropology, Mr. Howard B. Wilson, Winthrop Scholar for the years 1901–03. Mr. Wilson graduated with the Class of 1902 and was preparing for life work in anthropology. At the beginning of last summer he accepted a position under Dr. Franz Boas, of the American Museum of Natural History, for linguistic work in California. He had been for a few weeks with the Indians in the Sacramento Valley when he contracted the prevailing typhoid malaria and was obliged to go to the hospital at Willows. We learn from Dr. Dixon, who was with him at the hospital, that he was well cared for and had apparently recovered when, suddenly, he had a relapse and died of heart failure on August 4. Mr. Wilson was highly respected by his fellow students and by all in the Department and Museum. He was a faithful and conscientious student, with a natural proclivity for Indian languages. He would have made an important addition to our small corps of young men who are engaged in the study of American linguistics.

Dr. W. C. Farabee, who received the degree of Ph.D. in this division last Commencement Day and who has been Austin Teaching Fellow for two years, was appointed Instructor in Anthropology for the present year. A slight change was made in the courses in Anthropology for the year. Drs. Dixon and Farabee are now giving instruction in two full courses and three half-courses to undergraduates and graduates; and three research courses are offered in the Division.

During the past year I have withdrawn in part from the American Museum of Natural History, giving but one week a month instead of two to that institution, with the intention of closing my official connection with that museum at the end of the current year. During the summer vacation, as head of the Department of Anthropology in the University of California, I was in the state of California engaged in exploration and in directing the work of the department.

At a meeting of the Museum Faculty on April 1, the Corporation was requested to assume the care of the building, including janitor service and fuel. At its meeting on April 27, the Corporation voted

to take on these charges as part of the general College expenses. For several years, notwithstanding the economy of administration, the funds have not been sufficient to meet these expenses, and each year the Corporation has advanced a small sum which stands as a debt against the Museum.

F. W. PUTNAM,
Peabody Professor and Curator of the Museum.

THE SEMITIC MUSEUM.

TO THE PRESIDENT OF THE UNIVERSITY:—


SIR, — At the time of the last annual report the work of arranging the collections in their new home was going on, and the hope was expressed that this task might be completed early in the year 1903. That hope was realized, and on the 5th of February the Semitic Museum was formally opened, nearly twelve years after the first public exhibition of the Semitic collections in a room of the Peabody Museum (May 13, 1891).

At the opening exercises addresses were made by the Curator of the Museum, by Professor C. E. Norton representing the Board of Overseers, by Dr. Cyrus Adler of the Smithsonian Institution, by Jacob H. Schiff, Esq., the donor of the building, and by the President of the University. Letters were also read from Professor C. H. Toy, who was in Europe, and from other Semitic scholars.

This formal opening being the most notable event of the year in connection with the Museum, it is fitting that a brief account of the addresses should here be given. While they were all characterized by a spirit of rejoicing at what had been accomplished, there was due recognition of the fact that the usefulness of the Museum has but begun, and that its work of greatest importance, that of extending the bounds of knowledge by exploration and investigation, is yet to begin.

The address of the Curator gave the history of the growth of the collections and of the building, emphasized the importance of exploration in Semitic lands for further development of the Museum, and expressed the hope that the building itself, the departmental library, and the work of exploration might be suitably endowed.

Professor Norton declared that the great Semitic contribution to civilization is the Old Testament doctrine, "In the way of righteousness," and only in that way, "is life," and he closed with the hope that the collections as they increase may "not only add to the means of knowledge in the University," but may "help to quicken and strengthen in the youth who resort hither from generation to generation that spirit which found its highest poetic expression in the Semitic literature of the Hebrew race — that moral spirit, which is the inspiration of individual and of national righteousness."



Dr. Adler showed that it is an error to suppose religion to be "the only important product of the Semitic mind and soul"; that the rudiments of the sciences and the arts are also to be found in Western Asia, whence they were imported to Europe to aid in building up a new civilization; and that the time has come when a knowledge of what the Semites have wrought for mankind should be "the property of all cultivated men."

Professor Toy's letter describes the ancient western world "as a series of actions and reactions between the Semites and the Indo-Europeans. . . . Culture then, as now, was a process of give and take. In this process the Semites bore themselves bravely and with honor, borrowing freely and giving as freely."

Professor Morris Jastrow, Jr., of the University of Pennsylvania, in his letter, says, "The opening of the Harvard Semitic Museum marks, I firmly believe, an epoch in the further development of Semitic and general Oriental studies in this country."

In formally transferring the building to the University, Mr. Schiff said, addressing the President, "We commend it to the fostering care not only of yourself and of the governing bodies of this great University, but we commend it, likewise, to the good-will of all who believe that the gaining of a thorough knowledge of the civilization of those who have been before us means a better humanity and happier conditions for ourselves, and even more so for those who come after us, and who are to become judges and recorders of our own activities, of our own achievements, and of our own civilization."

In reply President Eliot said, "I accept on behalf of the President and Fellows of Harvard College this great and interesting gift, and I accept it in the spirit in which you offer it. I accept it as the storehouse of a great historical past, and with the confident anticipation that for centuries to come it will be the means of expounding an enlightening and inspiring progress which to us is an invisible future." After referring to our indebtedness to the Semitic race for "the conception of righteousness as a national ideal embodied in law," the President closed as follows:—

"This ideal characterizes the Old Testament, — and indeed both Testaments. There is another infinitely precious conception which we owe to the same race, a conception expressed more fully in the New Testament, though not lacking in the Old, — the purest and tenderest conception mankind has ever won of domestic love and joy. Therefore, I say, we owe to these Semitic peoples — the peoples from which came the three greatest religions of the modern world, or of any age of the world — the greatest spiritual conceptions of all time.

“We look forward to a continuous and enlarging usefulness for this Museum. We expect it to contribute year by year and century by century to the education and training of American youth in the sublime Semitic conceptions, and to their knowledge of the sources of these conceptions. The Museum, as has already been said, is necessarily to be a place for keeping safe sure records of the history of a great race; but we may be sure that it will also prove in the future the means of inducting our youth into new discoveries greater than any we now imagine, — discoveries as to the genesis and significance of our biblical records, and as to the development of the fundamental ideas which we owe to the Semitic peoples.”

Most of the objects bought for the Museum during my year abroad (1901-02) had arrived at the time of my last report. Others came to hand early enough to be placed in the cases before February 5th, and a few others have arrived since that time. Of the acquisitions during the year 1902-03, one is an original Assyrian inscription from king Assurnazirpal (9th century B.C.), on an alabaster slab about three feet square.

We have also purchased some models made at Jerusalem by Dr. Conrad Schick, a German archaeologist, resident for about fifty years in that city. A description of these may be reserved till the next annual report. The model of chief value is one of the Haram esh-Sherif, about 9×11 feet, giving an exact representation of the mosques and other buildings occupying the site of Solomon's Temple and Palace. A second model, of the same dimensions, is an attempt to reconstruct the Temple of Solomon and The Temple of Herod, while a third, of smaller size, represents the Tabernacle. These models reached Cambridge on December 24, 1903. It is probable that they can be placed on exhibition early in the year 1904. In connection with the purchase and the shipment we have had the valuable assistance of Professor George A. Barton, of Bryn Mawr College, and of the United States Consul at Jerusalem, Dr. Selah Merrill.

Dr. John Orne, Curator of Arabic Manuscripts, has continued the work of cataloguing and describing our manuscripts in this language.

The Museum is open to the public daily, except Sundays and holidays, from 9 A.M. till 5 P.M. No attempt has been made to keep a record of the number of visitors, but the number is considerable. Besides the single visitors, and groups of two or three, there are at times large parties, as of clergymen or of students from schools and colleges. The nature of this resort shows that the

Museum is attractive and instructive to the community at large, and it will become increasingly so in proportion as it becomes better known.

In closing I wish to call attention once more to the important subject of exploration. The Semitic Museum is the outgrowth primarily of an effort to secure the means for digging in Semitic lands. This original aim we have never lost sight of, and the times are now surely ripe for its realization. Several European universities and learned societies are displaying great activity in Egypt, Palestine, Babylonia and Assyria, and they are meeting with corresponding success. In Persia, too, Semitic literary remains of the first magnitude have been unearthed by M. de Morgan, notably the famous code of Hammurabi. Nor is the interest in America less keen than in Europe. Two of our universities, Pennsylvania and California, have been engaged in exploration for years, the work for the latter institution being done by two men trained at Harvard. Chicago University has recently employed another son of Harvard to dig in Babylonia. While we rejoice that Harvard men are doing this most useful service for learning in connection with these universities, we should be doubly happy if others of them were giving similar service to their alma mater. What is lacking is not the will but the money. The amount needed is so considerable that we can scarcely hope to secure it by general subscription. Most American exploring parties are sent out and supported by one person, or by a few persons, who are sufficiently acquainted with the subject to appreciate the rare opportunity. So it has been in Philadelphia, so in California, and so it is at Chicago. It will be a happy day for the University and for the Museum when some friend or friends shall make it possible for us to have a share in this most fascinating and most important work of recovering and of publishing the records of those great peoples whose ideas constitute such an important element in our own civilization.

D. G. LYON, *Curator.*

THE FOGG ART MUSEUM.

TO THE PRESIDENT OF THE UNIVERSITY :—

SIR, — I have the honor to present the following report on the Fogg Art Museum for the year 1902-03.

Our accessions are as follows : From H. G. Curtis, Esq., of Boston, of the Class of 1865, we have received a gift of forty-seven bronze reproductions of Italian and French Medals of the Renaissance, together with the handsome case in which they are displayed. While these medals have great interest as portraits of distinguished historical personages, they are also of high value as works of art, rivalling in their artistic qualities the finest coins of the ancients with which they may be readily compared in our Museum. The chief Italian master in works of this class, the well-known painter, Vittore Pisano, is represented in this collection by thirteen works. Among the portraits by him and others included in the gift are those of Alfonzo V of Aragon, Lionello D'Este of Ferrara, Filippo Maria Visconti of Milan, Leon Battista Alberti, Cosimo de' Medici, Lorenzo de' Medici, Mahomet II, Sultan of Turkey, Louis XI, Francis I, Charles IX, and Henry IV of France. The best French Medalist, Dupré, is well represented. Of the elaborate and beautiful compositions on the reverse sides, which cannot of course be seen as the medals lie in the case, we are having photographs made to hang against the wall. The medals are, for the most part, of considerable size, ranging from 40 or 50 to nearly 200 millimetres in diameter.

From Charles Fairfax Murray, Esq., of London, we have, as a gift in memory of his American friend, the late Mr. W. J. Stillman, Turner's water-color drawing of Devonport, a work executed between 1825 and 1830, the time of the master's most accomplished maturity, just after the completion of his great work, the *Liber Studiorum*, but before he attained the full freedom of his later style. It is one of his most elaborate compositions, and exhibits unrivalled delicacy, together with force, of handling. The drawing was formerly in the collection of the late John Ruskin, and is referred to by Mr. Ruskin, in the printed catalogue of this collection, as follows : "No more wonderful drawing, take it all for all, exists by his (Turner's) hand than this one, and the sky is the most exquisite in my own entire collection of his drawings. It is quite consummately true, as all things are when they are consummately lovely. It is of course the breaking

up of the warm rain-clouds of summer, thunder passing away in the west, the golden light and melting blue mingled with yet falling rain, which troubles the water surface, making it misty altogether, in the shade to the left, but gradually leaving the reflection clearer under the warm opening light. For subtle, and yet easily vigorous drawing of the hulls of our old ships of war, study the group in the rain, no less than the rougher one on the right." This work is a precious acquisition, and it more than fills the gap left by the withdrawal of Mr. Francis Bullard's beautiful drawing of Tintagel, which was loaned us for a while last year.

From Mr. Edward W. Forbes, '95, we have received, as an indefinite loan, an instructive early water-color drawing by the same master, making in all five original works by Turner now in our collection, representing as many periods of his artistic career from boyhood to his strongest maturity. These, with the few original water-color drawings by other Early English Masters, acquired in former years, afford useful illustration of the development of the beautiful modern art of landscape painting, which is to a very considerable extent essentially English.

From Dr. Oliver Tonks we have a gift of vase fragments illustrating many early forms of Greek pottery ornamentation, which will be of value to students of Greek art and archaeology.

To the Gray Collection of Engravings have been added the following prints: By gift from the engraver, Mr. Gustav Kruell, a portrait of the late Charles Darwin and a portrait of Mr. Wendell P. Garrison. By purchase out of the income of the Gray Fund, a portrait of Johannes Zurenus, engraved on copper by Goltzius; Death of the Virgin, engraved on copper by Schongauer; portraits of Abraham Lincoln, James Russell Lowell, and Charles Eliot Norton, respectively, engraved on wood by Kruell, and the following plates of the *Liber Studiorum* by Turner: Ben Arthur, etched by Turner and engraved in mezzotint by Lupton, a remarkably fine first state; Bridge and Cows, etched by Turner and engraved in mezzotint by C. Turner, first state; and the following subjects in the etched state: Young Anglers, St. Catherine's Hill, Winchelsea, Peat Bog, Norham Castle, Sheep-Washing, Temple of Jupiter, Frontispiece, Bridge and Cows, Woman and Tambourine, Farm-Yard with the Cock, Rispah, and Ville de Thune. These are all important additions to our *Liber series*, which now includes a considerable number of very choice impressions in the mezzotint state, and forty-one of the etchings, all of which are rare, and have been added since the Gray Collection was returned from the Boston Museum of Fine Arts.

To the Randall Collection have been added, by transfer from the College Library, mezzotint portraits, by Copley and Pelham respectively, of William Welsted, William Hooper, Timothy Cutter, Charles Brackwell, Henry Cauer, Thomas Prince.

To the Collection of photographs, 1,124 additions have been made, including illustrations of Mediaeval, Renaissance, and Modern Architecture, Modern Spanish Sculpture, Ancient Roman Architecture, Ancient Greek and Roman Sculpture, Mediaeval French Architecture, Italian Painting, and Ancient Architecture of Central Syria. Of these, 367 are the gift of an anonymous friend of the Museum.

To the collection of slides, only 24 additions were made. These represent Mediaeval Egyptian, Italian, and French Architecture, Renaissance Italian Architecture, and French and English Etching.

To the reference library of the Museum the following books have been added: *La Peinture en Europe — Le Louvre*; *Guide to Coins of the Ancients in the British Museum*, 4th edition; *Kgl. Museen zu Berlin Beschreibendes Verzeichnis der Gemälde*; *Allgemeines Künstler-Lexicon*, 5 vols.; *F. Muller's Catalogue des Tableaux Anciens*, gift of F. Muller & Co.; *Mrs. Jameson's Legends of the Monastic Orders*, and her *Sacred and Legendary Art*; *Catalogo della raccolta di disegni posseduta dalla R. Gal. degli Uffizi*; *Katalog d. Gemälde-Sammlung d. Kgl. alt. Pinakothek in München*; and *Cunningham's Handbook for London*, 2 vols., the last five titles transferred from the College Library.

The accessions to the library of the print collections are: *A Catalogue of the Plates of Turner's Liber Studiorum*, by C. E. Norton, transferred from the College Library; *Étude sur Jean Cousin*; *Suivie de Notices sur Jean Lectere et Pierre Warriot*, by Ambrose Firmin Didot, and *Recueil des œuvres choisies de Cousin reproduites en fac-simile*, both given by Miss Grace Norton, and *Les Graveurs du XIX siècle*; *Guide de l'Amateur d'estampes modern*, by Henri Beraldi, 12 vols., purchased out of the income of the Randall Fund.

To provide a suitable place for the display of the valuable Loeb Collection of ancient bronzes, vases, and gold ornaments, referred to in my last report, it was necessary to rearrange our collection of coins and vases previously acquired. These objects were accordingly transferred from the small, ill-lighted room, where they had before been kept, to the larger, and better lighted, northwest room on the ground floor, which is now devoted exclusively to bronzes, coins, medals, vases, and kindred objects, for the most part of Greek and Greco-Roman workmanship. Here the Loeb Collection is well installed in handsome dust-proof cases, where they may be conveniently studied.

In June last the Corporation voted to apply the income of the Searle bequest, amounting to \$80 or \$90 a year, to the purchase of books for the Fogg Museum. This is a very welcome addition to our slender resources. In the print department exhibitions were made during the year of the works of engravers of the school of Rubens, and of Dutch etchings of the seventeenth century. The number of prints catalogued during the year was: Of the Gray Collection (new accessions), 23; of the Randall Collection, 1,844. The total number of Randall prints now catalogued is 6,871. To facilitate the use of prints the following reference lists have been made within the year: A list of Block-Books, and lists of prints illustrating the processes of aquatint, mezzotint, etching, dry-point, soft ground, stipple, roulette, and chromolithography. The sheets of the Catalogue by Engravers show what prints in the Collection are executed in any of these processes.

The number of visits to the Museum for the use of photographs was 925, of which 695 were by members of Harvard University.

Photographs were loaned to the Department of Architecture, to Radcliffe College, and to individual borrowers connected with the University, and others, 283 times, and slides were loaned to the Department of Architecture, to Radcliffe College, and to individual borrowers, 133 times.

To the Print Department of the Museum persons using prints made 221 visits, of which 166 were by members of Harvard University.

Two printed catalogues have been issued during the year, a catalogue of the Loeb Collection, reprinted from the larger catalogue of the Forman Collection to which Mr. Loeb's objects formerly belonged, and a Catalogue of the Curtis Medals, which was prepared by our assistant, Miss Louise R. Albee.

For mounting photographs, and for other mechanical work, done for the College Library, the Department of Architecture, and for several outsiders, we have received the sum of \$156.14; and from the sale of photographs and catalogues we have received \$11.50.

With the development in the University of other museums in which the collections consist largely, if not exclusively, of works of art, as the Semitic Museum and the Germanic Museum, it would seem that, in order to avoid unnecessary and costly duplication, it would be desirable to have some common understanding, and common basis of action between them in respect to accessions. The Fogg Museum already includes a wide range of material illustrating both Semitic and Germanic art. In illustration of Germanic art it not only has a large collection of photographs of architecture, sculpture, and paint-

ing — German, Dutch, Flemish, Scandinavian, and English — but in its large and costly print collections it includes a wide range of original works in engraving which represent every phase of Germanic art in this branch from its earliest forms to those of the present time. We have also a working library embracing the most important literature of the subject, so that the history, principles, and processes of Germanic engraving may be studied here exhaustively. We are bound by the terms of the Gray and Randall bequests to maintain the growth of these print collections, and our policy therefore in respect to them cannot be changed; but as to future accessions of other classes of works, either originals or reproductions, I would suggest that henceforth the curators of the several University Museums might well confer in the interests both of economy and convenience.

Such has been the growth of our Museum that we are already becoming cramped for space. With any considerable addition to the collection of photographs, and such addition is very desirable, new cases will be required, but space for such cases can hardly be found without inconveniently crowding the main gallery. The room especially devoted to photographs has long been full, and two large cases are already placed in the main picture gallery. This gallery was not intended for storage, but it may well be put to this use when we are able to erect the much needed wings to the building providing rooms properly lighted for the display of our valuable paintings, and other important original works of art. Plans for these wings have been prepared, and the estimated cost of them is \$40,000 and \$50,000 respectively. It is to be hoped that the means to construct at least one wing may before long be found.

CHARLES H. MOORE, *Director.*

THE GERMANIC MUSEUM.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,—The collections of the Germanic Museum, as far as they were installed during the academic year 1902–03, may be summed up as follows:—

The industrial activity of Germanic tribes previous to the establishment of the Karolingian empire is represented by a few isolated objects, such as a grave-urn of the fifth century from the island of Föhr, a model of the Nydam boat from the Museum of Germanic Antiquities at Kiel, a figure of a Frankish warrior of the seventh century, with exact reproductions of arms and implements, from the Roman-Germanic Museum at Mainz. The bulk of the collection is devoted to German art in the narrower sense, particularly to German architecture and sculpture of the Middle Ages and the Renaissance.


The background of this part of the Museum is formed by 150 large photographs from the Königlich Preussische Messbildanstalt at Berlin, covering the walls of the lower aisle of the building, and containing views of the exteriors and interiors of the principal German cathedrals, castles, city halls, and private houses from the eleventh to the sixteenth century. The central hall as well as a large part of the side aisle is given over to representative specimens, in plaster cast, water color, and galvano-plastic reproductions, of monumental works of German art during this period.

The eleventh century is exhibited by casts of the Bernward column and the bronze gates of Hildesheim cathedral; the twelfth century by water-color reproductions of Romanesque mural paintings in the churches of Brauweiler and Schwarzhof, and by casts of the choir-screen of St. Michael's at Hildesheim and parts of the choir-screen of Bamberg cathedral. The thirteenth century, the classic epoch of mediaeval German sculpture, is brought to view by a considerable number of remarkable monuments: the baptismal font of Hildesheim cathedral; the Golden Gate of Freiberg; the tomb of Henry the Lion and his wife at Brunswick; the statues of emperor Henry II and empress Kunigunde from Bamberg cathedral; the Death of Mary, a Wise and a Foolish Virgin, two Virtues crushing Vice, and the figures of Ecclesia and Synagoga from Strassburg cathedral; the small portal of Our Lady's at Trèves; and a superb

array of monuments from Naumburg cathedral, including the whole of the rood screen and eleven of the masterly portrait statues of princely patrons and patronesses. The fourteenth century is represented by only one work of art: the tomb of St. Aurelia in the monastery of St. Emmeran at Regensburg.

The rest of the collection brings out the development of German sculpture from the end of the fifteenth to the end of the eighteenth century. Among the most important objects from this period contained in our Museum may be mentioned: the huge bishop's seat by Jörg Syrlin from Ulm cathedral; the Seventh Station by Adam Kraft, the Mater Dolorosa from the Germanic Museum, and a Renaissance door from the Hirschvogel House at Nuremberg; the figure of a Swiss warrior from the Metzgerbrunnen at Schaffhausen; parts of Hans Brüggemann's altarpiece at Schleswig cathedral; Peter Vischer's tomb of St. Sebald, King Arthur, and tomb of the Count of Henneberg and his wife; Emperor Maximilian, from his tomb at Innsbruck; 150 plaquettes by Peter Floetner and other masters of the sixteenth and seventeenth centuries; Andreas Schlüter's equestrian statue of the Great Elector, and three masks of dying soldiers from the Royal Arsenal at Berlin; finally, Schadow's Frederick the Great.

The rapid growth and the present hopeful condition of the Museum are due above all to the generous and high-minded initiative of His Majesty the German Emperor, to whom Harvard University is indebted for an act of international friendliness unparalleled in American educational history. Many of the finest and largest objects in our collection are the Emperor's gift, and his donation makes our Museum a storehouse of some of the greatest landmarks in the development of German plastic art. To the sentiment of profound and respectful gratitude towards our imperial benefactor — a sentiment which to me as Curator of the Museum is particularly precious — I would add here the expression of our keen appreciation of the thoughtful care with which Dr. Richard Schöne, director-general of the Prussian Museums, has guided the execution, transportation, and installation of this admirable gift. Nor should other friends and supporters of the Museum fail of grateful recognition in this report. Chief among them are: the late Professor Herman Grimm; Dr. Theodor von Holleben, formerly German Ambassador at Washington; Dr. Heinrich Angat, director of the Swiss National Museum; Dr. Althoff, government commissioner of the Prussian universities; Dr. Julius Lessing, director of the Royal Museum of Arts and Crafts at Berlin; Professor A. Brandl of Berlin University;



Herr Arthur Gwinner, director of the Deutsche Bank; Mr. Heinrich Conried, director of the Irving Place Theatre of New York; the late Mr. Barthold Schlesinger of Brookline; the officers of the Germanic Museum Association; the United German Singing Societies of Boston; the Council of the North American Turnerbund at Indianapolis. May the further development of our Museum be worthy of the disinterested care bestowed upon it by these and many other helpers and sympathizers.

The rapid review given above of the collection as now installed makes it clear that, although our Museum is the first even partially successful attempt either in this country or abroad to equip a university with representative specimens of the artistic growth of a modern nation, it is nevertheless nothing but a small and tentative beginning of what its name, Germanic Museum, implies. At present it is *not* a Germanic Museum; it is an exhibition, inadequately housed, of some striking specimens of German art. The Germanic Museum of the future is to illustrate the whole development of Germanic life in its artistic and industrial manifestations throughout Europe, on English, Dutch, Scandinavian, Swiss, Austrian soil, no less than German.

Every one of the objects now contained in the Museum is to expand into one or more categories of kindred objects. Instead of the one model of a Germanic boat from the fifth century, mentioned before, we must have three or four rooms filled with reproductions of implements, utensils, arms, and with models of mounds and dwellings, representing conditions of life on Germanic soil from the time of the lake-dwellers in Switzerland to the Anglo-Saxon invasion of England and the piratic expeditions of the Norsemen. Instead of the one figure of a Frankish warrior of the seventh century, we must have a comprehensive collection of similar objects, illustrating the influence of Roman civilization upon Germany from the time of Augustus to the establishment of the Karolingian empire. Instead of the two or three mediaeval sarcophagi now in our possession, we must have a systematically arranged display of sepulchral monuments from the tomb of Henry the Lion at Brunswick to the Mausoleum of the Prussian kings at Charlottenburg. Instead of the one Renaissance door from a patrician house at Nuremberg, we must have a large array of objects representing the various stages in the development of the Germanic house. We must have types, among others, of the Frisian, Saxon, Swabian, Bavarian, Anglo-Saxon, Scandinavian farmhouse; models of the mediaeval town hall; models of the mediaeval castle; reproductions of the interiors of houses from the

sixteenth century on. We could, for instance, easily reproduce a whole story of the Dürer house at Nuremberg, the Elizabeth or the Luther room at the Wartburg, part of the interior of the Goethe house at Frankfurt, and similar historic rooms which, apart from the more personal interest attached to them by the memory of great men, would at the same time be miniature illustrations of the domestic life of the epochs to which they belonged. We must, in brief, make this Museum a comprehensive, yet condensed, historical conspectus of the artistic and technical activity of our race. Only when this has been accomplished will it truly deserve the name of a Germanic Museum.

It is clear that, in order to bring about this consummation devoutly to be hoped for, two things are necessary: (1) a continuous influx either of money or of suitable and representative objects, and (2) a large and monumental building, making possible a truly historical and at the same time artistic arrangement of the various parts of the collection. As to the first point, we may rest assured that the magnificent gifts from the German Emperor, the Swiss Government, and the Committee of German citizens at Berlin, which either have been installed already or shortly are to arrive, will stimulate other gifts from many quarters. May we not also hope that a building worthy to shelter these precious symbols of the Germanic past will be given before long?

KUNO FRANCKE, *Curator*.

RADCLIFFE COLLEGE.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,—As Dean of Radcliffe College, I have the honor to submit my report for the academic year 1902–03.

The number of students in actual attendance during the year was 429, as against 456 during the preceding year.

Graduate Students	43
Seniors	67
Juniors	68
Sophomores	83
Freshmen	75
Special Students	93
Total	429

At Commencement in June, 1903, eighty students, two of whom had not been in residence during the year, received the degree of Bachelor of Arts. Sixteen students, who had not been registered as Seniors, received the degree, and five, who had been so registered, failed to receive it. Of the eighty successful candidates, two received the degree *summa cum laude*; sixteen received it *magna cum laude*; twenty-five *cum laude*.

Nineteen students received the degree of Master of Arts. Eight of the nineteen had taken their first degree at Radcliffe; the others represented the following colleges: Acadia University, Colorado College, Dalhousie University, Lake Forest University, McGill University, Northwestern University, Smith College, University of Toronto, Wellesley College, University of Wisconsin.

Examinations for admission were held in June, 1903, in Cambridge and New York; in Albany, Bonn (Germany), Brookline, Chicago, Cincinnati, Exeter (N.H.), Fall River, Louisville (Ky.), Lynn, Milton, Osaka (Japan), Philadelphia, Portland (Me.), Quincy, South Byfield, Springfield, Washington (Conn.), Worcester, and Youngstown (Ohio). They were also held in September in Cambridge. Three hundred and twenty-two candidates presented themselves for examination. Thirteen were candidates for admission as special students; fifty-three candidates took part of the examination or worked off admission conditions; one candidate was examined for advanced standing; one hundred and twenty-six took the Pre-

liminary Examinations, and one hundred and twenty-four the Final Examinations. Three Postponing candidates were rejected, and two did not complete their examinations.

The results of the Final Examinations are given in the following table:—

	Admitted.	Admitted "Clear."	Rejected.
June	108	46	6
September	8		2
Total	116		8
Total rejected	8		
	124		

One hundred and sixteen candidates were admitted as Freshmen in 1903, as against eighty-eight in 1902.

Forty-three Graduate Students registered during the year, twenty-seven of whom were from other colleges. Twenty-nine students were admitted to thirteen full courses, and thirty-two students to sixteen half-courses of the "Courses primarily for Graduates in Harvard University open to competent students of Radcliffe College."

Classical Philology was taken	by sixteen students.
German was taken	by five students.
Germanic Philology was taken	by seven students.
History was taken	by two students.
Government was taken	by one student.
Philosophy was taken	by four students.
Education was taken	by seventeen students.
Music was taken	by one student.
Mathematics was taken	by eleven students.

The number of courses offered in 1902-03 was $171\frac{1}{2}$; they were offered by 117 professors and instructors in Harvard University.

The members of the Academic Board for 1902-03 were: Professors Byerly (chairman), Warren, Mark, Wright, Macvane, Hall, von Jagemaun, Grandgent, and Kittredge, and the President and the Dean of Radcliffe College.

Bertram Hall has had a happy and prosperous year, and the need for a second hall is now apparent.

The gifts of the year, though not many, have been singularly interesting. One splendid gift, — a sum of money for what is known as a Students' House, — meets a pressing need of Radcliffe College. In a college like Radcliffe, where hundreds of young women must spend the long hours of the working-day, provision must be made for food and rest, for recreation and social intercourse, and a building for the purpose is an absolute necessity, in order that the dining-rooms and quiet rooms, the rooms for social gather-

ings and for the breaks in the day's work may be kept apart from the academic building. This was the need of Radcliffe which appealed most strongly to Mrs. Agassiz, and, in the autumn of 1902, her children and grandchildren offered to give Radcliffe College \$50,000 for a Students' House, if an equal sum were raised or promised before the fifth of December, in order that on that day, her eightieth birthday, Mrs. Agassiz might be told that her cherished wish was about to be fulfilled. The Radcliffe Alumnae Association, who had already undertaken to raise \$100,000 for the purpose, and two friends of the College, who had the matter deeply at heart, joined forces with the committee, forty-one in number, who took the matter in hand; the work proved a labor of love; the sum asked for, and more, — \$116,500, — was given or pledged; the secret from Mrs. Agassiz was perfectly kept; and on her birthday she had the great happiness of knowing that her hope would be realized. The building is to be called the Elizabeth Agassiz House; the site has been chosen, in the Radcliffe precincts, next to the Gymnasium; and plans have been drawn by Mr. A. W. Longfellow.

A second gift of great interest is the establishment in Radcliffe College, for an experimental period of two years, of a fellowship to be called the South End House Fellowship to be devoted to the promotion of the study of social problems by women. The incumbent is to be registered as a graduate, or special, student in Radcliffe College, but to reside during eleven months of the year in the South End House (Women's Residence) in Boston. She is to be nominated each year by the Dean of Radcliffe College and the Professor of Sociology in Harvard College, in conference with the Head of the South End House and the donor of the Fellowship, Miss Annette P. Rogers. The holder of the Fellowship is to devote not less than half her working-time to the original investigation of some concrete problem of the city-life in Boston. The Fellow for the year 1903-04 is a Radcliffe graduate, Charlotte Henrietta Price, A.B. 1901.

A third gift was announced at Commencement, the gift of \$2,500 by the Cantabrigia Club of Cambridge, towards a Scholarship to be known as the Cantabrigia Scholarship and to be held by preference by a resident of Cambridge. This gift from our friends and neighbors is deeply appreciated. The Cantabrigia Club sets a noble example to the Women's Clubs in Massachusetts, many of whom have already befriended our students. There is no better service to the Commonwealth than to open the way into college to those able and deserving young women who cannot work their way as easily as men do, and who run the risk of working it at too great a cost.

A fourth gift was to the Library, the sum of \$909, a sum which had been nicely calculated to cover the needs of the Library in books for the Classical Department. For this Radcliffe has to thank one donor, Edgar Scott. The books in memory of Professor Greenough have been purchased and are a great addition to the Library. An anonymous giver has added \$100 to the Arthur Gilman Book-fund. The number of volumes in the Radcliffe Library is now very nearly twenty thousand; they are lodged in a wooden building, many of them out of easy reach, and the rooms are overcrowded with students, who come to the Library for the legitimate and wholesome purpose of study. To the Alumnae and to some of the Associates, as well as to the undergraduates, the first need of the College in the way of a building is a place to house the books, and to give the students ample opportunity to use them. Radcliffe needs only a working-library; it asks for a building to make that working-library available, and also for the endowment of such a building.

But, even before a library building, before a second hall of residence, which will soon be indispensable, comes the need of a large addition to the endowment fund, — a large unrestricted addition. In the Summer of 1903, a large gift was assured to the College, but only in the future, and the need of money is felt now by Radcliffe as it has never before been felt.

At the meeting of the Associates in June, 1903, Mrs. Agassiz formally withdrew from her position in Radcliffe College, and Le Baron Russell Briggs, Dean of the Faculty of Arts and Sciences in Harvard University, was unanimously elected President of Radcliffe College. What Mrs. Agassiz has been and is still to Radcliffe College, no one needs to say. What Mr. Briggs has been to Harvard College in the past, what he will surely be to Radcliffe College in the future, no one can know so well as the President of Harvard University.

AGNES IRWIN, *Dean.*



APPENDIX.

DEATHS.

[Persons who died in 1902-03 while holding a University appointment.]

- GEORGE HAVEN, Instructor in Gynaecology. September 27, 1903.
HENRY BARKER HILL, Professor of Chemistry and Director of the Chemical Laboratory. April 6, 1903.
ARTHUR LINCOLN, Overseer. December 10, 1902.

RESIGNATIONS.

- CHARLES FREDERICK COVERT ARENSBERG, Assistant in English, to take effect September 1, 1903.
CHARLES HAMILTON ASHTON, Instructor in Mathematics, to take effect September 1, 1903.
JOHN WASHBURN BARTOL, Assistant in Clinical Medicine. January 26, 1903.
ALBERT FRANCIS BLAKESLEE, Austin Teaching Fellow in Botany. June 23, 1903.
CHARLES HERBERT BOXMEYER, Austin Teaching Fellow in Comparative Pathology. May 11, 1903.
JOHN HIGGINSON CABOT, 2d, Assistant in History. June 29, 1903.
PHILIP GREENLEAF CARLETON, Assistant in English. November 24, 1902.
JOHN FIRMAN COAR, Instructor in German. June 29, 1903.
FRANKLIN DEXTER, Associate Professor of Anatomy. March 30, 1903.
FRANK WINTHROP DRAPER, Professor of Legal Medicine. May 11, 1903.
GEORGE LINCOLN FORREST, Instructor in Operative Dentistry. November 10, 1902.
SANFORD HENRY EISNER FREUND, Assistant in English, to take effect September 1, 1903.
RALPH TRACY HALE, Assistant in English. June 23, 1903.
ALPHONSE MARIN LA MESLÉE, Instructor in French. April 27, 1903.
WALDO GIFFORD LELAND, Assistant in History. January 26, 1903.
GILBERT SIMRELL MEEM, Jr., Proctor, to take effect September 1, 1903.
HUGO RICHARD MEYER, Instructor in Economics. May 26, 1903.
CHARLES WHITNEY MIXTER, Instructor in Economics, to take effect September 1, 1903.
CHARLES BURNHAM PORTER, Professor of Clinical Surgery. February 9, 1903.
MOTTE ALSTON READ, Instructor in Physiography. April 27, 1903.
ARTHUR CHARLES ROUNDS, Lecturer on New York Practice. January 12, 1903.
FRANK RUSSELL, Instructor in Anthropology. May 11, 1903.

- CHARLES STEPHEN SHAUGHNESSY, Instructor in Mathematics and Surveying, to take effect September 1, 1903.
- CRAWFORD HOWELL TOY, Dexter Lecturer on Biblical Literature, to take effect September 1, 1903.
- DANIEL LAWRENCE TURNER, Instructor in Surveying and Hydraulics. April 13, 1903.
- FREDERICK WARREN TURNER, Assistant in Shopwork, to take effect September 1, 1903.
- OLIVER FAIRFIELD WADSWORTH, Williams Professor of Ophthalmology. April 13, 1903.
- HENRY PICKERING WALCOTT, Chairman of the Committee on the University Museum. December 29, 1902.
- KENNETH GRANT TREMAINE WEBSTER, Instructor in English. June 1, 1903.
- EDGAR HUDEKOPER WELLS, Assistant in English. November 24, 1902.
- ROBERT MAXIMILIAN OTTOMAR WERNAER, Instructor in German. April 27, 1903.
- FREDERICK WILKEY, Steward of the Randall Hall Association, to take effect September 1, 1903.

APPOINTMENTS.

FACULTY OF ARTS AND SCIENCES.

[*Without limit of time, or for more than one year.*]

- ABRAM PIATT ANDREW, Assistant Professor of Economics for five years from September 1, 1903. March 30, 1903.
- IRVING BABBITT, Assistant Professor of French for five years from September 1, 1902. November 24, 1902.
- CHARLES JESSE BULLOCK, Assistant Professor of Economics for five years from September 1, 1903. May 11, 1903.
- WILLIAM ERNEST CASTLE, Assistant Professor of Zoölogy for five years from September 1, 1903. June 1, 1903.
- GEORGE HENRY CHASE, Tutor in Greek for three years from September 1, 1903. March 2, 1903.
- EDWIN FRANCIS GAY, Assistant Professor of Economics for five years from September 1, 1903. March 30, 1903.
- WILLIAM FENWICK HARRIS, Assistant Professor of Greek for five years from September 1, 1902. October 27, 1902.
- HECTOR JAMES HUGHES, Assistant Professor of Hydraulics and Sanitary Engineering for five years from September 1, 1903. March 30, 1903.
- THOMAS AUGUSTUS JAGGAR, Jr., Assistant Professor of Geology for five years from September 1, 1903. March 30, 1903.
- CHARLES ROCKWELL LANMAN, Wales Professor of Sanskrit. March 23, 1903.
- GILBERT NEWTON LEWIS, Instructor in Chemistry for three years from September 1, 1903. January 12, 1903.
- THEODORE LYMAN, Instructor in Physics from September 1, 1903. May 26, 1903.
- DICKINSON SERGEANT MILLER, Instructor in Philosophy from September 1, 1903. March 30, 1903.

- CLIFFORD HERSCHEL MOORE, Assistant Professor of Greek and Latin for five years from September 1, 1903. March 30, 1903.
- FREDERICK LAW OLMSTED, Jr., Charles Eliot Professor of Landscape Architecture from September 1, 1903. June 23, 1903.
- WILLIAM FOGG OSGOOD, Professor of Mathematics from September 1, 1903. March 23, 1903.
- GEORGE WASHINGTON PIERCE, Instructor in Physics from September 1, 1903. May 26, 1903.
- CHARLES ROBERT SANGER, Director of the Chemical Laboratory, May 26, 1903; Professor of Chemistry from September 1, 1903. June 23, 1903.
- GEORGE SANTAYANA, Assistant Professor of Philosophy for five years from September 1, 1903. March 30, 1903.
- WILLIAM HENRY SCHOFIELD, Assistant Professor of English for five years from September 1, 1902. October 27, 1902.
- WALTER RAYMOND SPALDING, Assistant Professor of Music for five years from September 1, 1902. October 27, 1902.
- HENRY AUGUSTUS TORREY, Instructor in Chemistry from September 1, 1903. June 1, 1903.
- ROBERT WHEELER WILLSON, Professor of Astronomy. May 11, 1903.

[For 1902-03.]

- CHARLES FREDERICK COVERT ARENSBERG, Assistant in English. November 10, 1902.
- FRANK AYDELOTTE, Assistant in English. November 10, 1902.
- CHARLES BEARDSLEY, Instructor in Economics. November 10, 1902.
- GUSTAVE EDWARD BEHR, Jr., Assistant in Chemistry. September 26, 1902.
- HOLLAND EDWARD BENEDICT, Assistant in Chemistry. October 13, 1902.
- OTIS FISHER BLACK, Assistant in the Chemical Laboratory. October 13, 1902.
- FREDERIC BONNET, Jr., Assistant in Chemistry. September 26, 1902.
- PAUL GUSTAV ADOLPH BUSSE, Assistant in German. November 10, 1902.
- ALFRED MUNSON BUTLER, Assistant in Chemistry. September 26, 1902.
- PHILIP GREENLEAF CARLETON, Instructor in English. November 10, 1902.
- HENRY AVERY CARLTON, Assistant in Chemistry. September 26, 1902.
- HOWARD HASTINGS CARROLL, Assistant in Mechanical Drawing. October 13, 1902.
- CHARLES EMERSON CORSON, Assistant in Chemistry. October 13, 1902.
- PAUL REVERE CURTIS, Assistant in Mining and Metallurgy. October 27, 1902.
- ARTHUR STONE DEWING, Assistant in Philosophy. October 27, 1902.
- GEORGE ROWLAND DODSON, Assistant in Philosophy. October 27, 1902.
- FREDERIC GERBER DORETY, Assistant in Government. November 10, 1902.
- HENRY WILLIAM DUBÉE, Instructor in German. October 13, 1902.
- ALFRED EDWARD ELLS, Assistant in English. November 10, 1902.
- WILLIAM CURTIS FARABEE, Austin Teaching Fellow in Anthropology. November 10, 1902.
- GEORGE SHANNON FORBES, Assistant in Chemistry. September 26, 1902.
- SANFORD HENRY EISNER FREUND, Assistant in English. November 10, 1902.
- HENRY BRAYTON GARDNER, Lecturer on the Financial History of the United States. September 26, 1902.
- JESSE MORE GREENMAN, Instructor in Botany and Assistant at the Gray Herbarium. November 10, 1902.

- ERNST HERMANN PAUL GROSSMANN, Instructor in German. October 13, 1902.
RALPH TRACY HALE, Assistant in English. November 10, 1902.
ADAM LEOPOLD HASKELL, Austin Teaching Fellow in Engineering. October 13, 1902.
WALTER STERN HEILBORN, Assistant in Government. November 10, 1902.
HARRY PETERS HENDERSON, Instructor in Mining. March 9, 1903.
JOHN PHILIP HILL, Assistant in Government. November 10, 1902.
MURRAY ARNOLD HINES, Assistant in Chemistry. September 26, 1902.
PRENTISS CHENEY HOYT, Instructor in English. November 10, 1902.
PERCY ADAMS HUTCHISON, Assistant in Philosophy. October 27, 1902.
JOHN PERHAM HYLAN, Assistant in Philosophy. October 27, 1902.
GORDON IRELAND, Assistant in Philosophy. October 13, 1902.
RICHARD FAY JACKSON, Assistant in Chemistry. October 13, 1902.
KARL DETLEV JESSEN, Instructor in German. October 13, 1902.
JOHN ROBERT JOHNSTON, Austin Teaching Fellow in Botany. October 13, 1902.
JOHN FRANK LANGMAID, Assistant in Chemistry. September 26, 1902.
KENNETH LAMARTINE MARK, Assistant in Chemistry. September 26, 1902.
JUNIOUS LATHROP MERIAM, Assistant in Philosophy. October 27, 1902.
FREDERIC WILLIAM MORRISON, Assistant in French. September 26, 1902.
HORACE HENRY MORSE, Assistant in History. November 10, 1902.
JAMES BLAIR NEWELL, Assistant in History for the second half-year. March 2, 1903.
JAMES STURGIS PRAY, Assistant in Landscape Architecture. October 13, 1902.
WILLIAM RICHARD RANSOM, Instructor in Mathematics. October 27, 1902.
ALBIN LEAL RICHARDS, Instructor in International Law. November 10, 1902.
FRED MORTON ROBERTS, Assistant in Government. November 10, 1902.
DAVID CAMP ROGERS, Assistant in Philosophy. October 27, 1902.
ARTHUR JULIUS SCHOENFUSS, Assistant in Mining and Metallurgy. October 27, 1902.
PHILIPP SEIBERTH, Instructor in German. October 13, 1902.
SCHUYLER B SERVISS, Assistant in Physics. November 10, 1902.
AUGUSTUS HUNT SHEARER, Assistant in History. November 10, 1902.
HENRY ROBINSON SHIPMAN, Assistant in History. October 13, 1902.
PHILIP SIDNEY SMITH, Austin Teaching Fellow in Geology. November 10, 1902.
HORACE BAXTER STANTON, Assistant in English. November 10, 1902.
HERBERT KING STOCKTON, Assistant in English. November 10, 1902.
HENRY LEROY STONE, Assistant in Music. November 10, 1902.
JOHN STRONG PERRY TATLOCK, Assistant in English. November 10, 1902.
JAMES WADDELL TUPPER, Instructor in English. November 10, 1902.
ROBERT PALFREY UTTER, Assistant in English. November 10, 1902.
CHARLES BEN VAN WIE, Assistant in Philosophy. October 27, 1902.
DAVID HUTTON WEBSTER, Austin Teaching Fellow in Economics. October 27, 1902.
EDGAR HUIDEKOPER WELLS, Instructor in English. November 10, 1902.
PLUMER WHEELER, Assistant in Chemistry. November 10, 1902.
HARRY OSCAR WOOD, Assistant in Mineralogy and Petrography. September 26, 1902.
ARTHUR DICKINSON WYMAN, Assistant in Chemistry. September 26, 1902.

[*For the Calendar Year 1903.*]

CYRUS GUERNSEY PRINGLE, Botanical Collector. March 30, 1903.

[*For 1903-04.*]

OAKES AMES, Instructor in Botany. March 30, 1903.

CHARLES FREDERICK COVERT ARENSBERG, Assistant in English. March 30, 1903.

CHARLES HAMILTON ASHTON, Instructor in Mathematics. May 26, 1903.

CHARLES HAMILTON AYRES, Instructor in Physics. March 30, 1903.

NEWTON SAMUEL BACON, Assistant in Hygiene. April 13, 1903.

WILLIAM WILSON BAKER, Instructor in Latin. March 30, 1903.

BIRD THOMAS BALDWIN, Assistant in Philosophy. April 13, 1903.

OTIS FISHER BLACK, Assistant in the Chemical Laboratory. March 30, 1903.

ALBERT FRANCIS BLAKESLEE, Austin Teaching Fellow in Botany. May 11, 1903.

ALBERT WILHELM BOESCHE, Instructor in German. April 27, 1903.

FOSTER PARTRIDGE BOSWELL, Assistant in Philosophy. April 13, 1903.

HERBERT MELVILLE BOYLSTON, Assistant in Metallurgy. May 26, 1903.

HENRY COOK BOYNTON, Instructor in Metallurgy and Metallography. March 30, 1903.

HAVEN DARLING BRACKETT, Assistant in History. April 27, 1903.

CARLETON FAIRCHILD BROWN, Instructor in English. June 23, 1903.

ALPHONSE BRUN, Instructor in French. March 30, 1903.

JOHN HIGGINSON CABOT, 2d, Assistant in History. April 13, 1903.

ANTONIO ALFREDO CAPOTOSTO, Assistant in Italian. March 30, 1903.

EDWARD CAPPS, Lecturer on the Greek Theatre. March 2, 1903.

PHILIP GREENLEAF CARLETON, Instructor in English. March 30, 1903.

WILLIAM RICHARD CASTLE, Jr., Assistant in English. June 23, 1903.

LYMAN KENNETH CLARK, Assistant in Government. April 13, 1903.

JOHN FIRMAN COAR, Instructor in German. March 30, 1903.

JOHN FELT COLE, Instructor in Astronomy. March 30, 1903.

LEON JACOB COLE, Austin Teaching Fellow in Zoölogy. March 30, 1903.

WILLIAM MORSE COLE, Instructor in the Principles of Accounting. March 30, 1903.

FREDERICK SHEPPARD CONVERSE, Instructor in Music. May 26, 1903.

PAUL REVERE CURTIS, Assistant in Ore-dressing and Assaying. March 30, 1903.

VANDERVEER CUSTIS, Assistant in Economics. March 30, 1903.

STUART DAGGETT, Assistant in Economics. March 30, 1903.

GEORGE HENRY DANTON, Austin Teaching Fellow in German. April 27, 1903.

ARTHUR STONE DEWING, Assistant in Philosophy. April 13, 1903.

HORATIO WILLIS DRESSER, Assistant in Philosophy. April 13, 1903.

CHARLES MATHIEU DUMAS, Assistant in French. May 26, 1903.

BERNARD CAPEN EWER, Assistant in Philosophy. April 13, 1903.

WILLIAM CURTIS FARABEE, Instructor in Anthropology. June 1, 1903.

MERRITT LYNDON FERNALD, Instructor in Botany and Assistant at the Herbarium. March 30, 1903.

JAMES ALFRED FIELD, Assistant in Economics. March 30, 1903.

RICHARD THORNTON FISHER, Instructor in Forestry. June 1, 1903.

- JOHN MURRAY FOX, Austin Teaching Fellow in Mining and Metallurgy. March 30, 1903.
- SANFORD HENRY EISNER FREUND, Assistant in English. March 30, 1903.
- ARTHUR BOWES FRIZELL, Instructor in Mathematics. March 30, 1903.
- CHARLES EDMUND FRYER, Assistant in History. April 13, 1903.
- ANDREW GARBUTT, Instructor in Modeling. March 30, 1903.
- JAMES AUGUSTUS GEORGE, Assistant in Government. April 13, 1903.
- JAMES WALTER GOLDTHWAIT, Austin Teaching Fellow in Geology. May 26, 1903.
- JESSE MORE GREENMAN, Instructor in Botany. June 8, 1903.
- WILLIAM MUMFORD GREGORY, Assistant in Palaeontology. March 30, 1903.
- ERNST HERMANN PAUL GROSSMANN, Instructor in German. March 30, 1903.
- RALPH TRACY HALE, Assistant in English. March 30, 1903.
- THOMAS HALL, Jr., Instructor in English. March 30, 1903.
- EDWARD WILLIAM HAMILL, Assistant in German. April 27, 1903.
- CHARLES SUMNER HAMLIN, Lecturer on United States Government Service. March 23, 1903.
- LYMAN SAWIN HAPGOOD, Assistant in Hygiene. April 13, 1903.
- ADAM LEOPOLD HASKELL, Austin Teaching Fellow in Engineering. March 30, 1903.
- HENRY HARRISON HAYNES, Instructor in Semitic Languages. March 9, 1903.
- LEWIS DANA HILL, Austin Teaching Fellow in Physics. March 30, 1903.
- ARTHUR STEDMAN HILLS, Instructor in Elocution. April 27, 1903.
- MURRAY ARNOLD HINES, Assistant in Quantitative Analysis. May 4, 1903.
- EDWIN BISSELL HOLT, Instructor in Psychology. March 30, 1903.
- DONALD WINTHROP HOWES, Assistant in Mechanical Drawing. March 30, 1903.
- PRENTISS CHENEY HOYT, Instructor in English. March 30, 1903.
- EDWARD VERMILYE HUNTINGTON, Instructor in Mathematics. March 30, 1903.
- PERCY ADAMS HUTCHISON, Assistant in Philosophy. April 13, 1903.
- JOHN PERHAM HYLAN, Assistant in Philosophy. April 13, 1903.
- JOHN GEORGE JACK, Instructor in Forestry. June 23, 1903.
- JOHN ROBERT JOHNSTON, Austin Teaching Fellow in Botany. June 23, 1903.
- CHARLES JULIUS KULLMER, Instructor in German. March 30, 1903.
- ALPHONSE MARIN LA MESLÉE, Instructor in French. March 30, 1903.
- JOHN FRANK LANGMAID, Assistant in Chemistry. June 8, 1903.
- AUSTIN PARK LARBABEE, Assistant in Zoölogy. March 30, 1903.
- ROLLO LU VERNE LYMAN, Instructor in English. June 23, 1903.
- WILLIAM EDWARD MCCLINTOCK, Instructor in Highway Engineering. March 30, 1903.
- THOMAS CALVIN MCKAY, Assistant in Physics. March 30, 1903.
- ROGER BIGELOW MERRIMAN, Instructor in History. March 30, 1903.
- HUGO RICHARD MEYER, Lecturer on Economics. May 26, 1903.
- ROBERT BELL MICHELL, Instructor in Romance Languages. April 13, 1903.
- CHARLES WHITNEY MIXTER, Instructor in Economics. March 30, 1903.
- GILBERT HOLLAND MONTAGUE, Assistant in Economics. March 30, 1903.
- SYLVANUS GRISWOLD MORLEY, Instructor in Romance Languages and Literatures. March 30, 1903.
- HORACE HENRY MORSE, Assistant in History. April 13, 1903.
- HARRY WHEELER MORSE, Instructor in Physics. March 30, 1903.
- MARTIN MOWER, Instructor in Fine Arts. March 30, 1903.

- WILLIAM LUTHER MOWLL, Instructor in Architecture. March 2, 1903.
JAMES AMBROSE MOTER, Instructor in Descriptive Geometry. March 30, 1903.
HERMAN DUDLEY MURPHY, Instructor in Drawing from the Life. March 30, 1903.
ARTHUR BECKWITH MYRICK, Austin Teaching Fellow in Romance Languages. March 30, 1903.
JAMES BLAIR NEWELL, Assistant in History. May 11, 1903.
ARTHUR EDWIN NORTON, Instructor in Mechanical Drawing. March 30, 1903.
CARLETON ELDREDGE NOYES, Instructor in English. March 30, 1903.
CHARLES READ NUTTER, Instructor in English. March 30, 1903.
HANNS OERTEL, Lecturer on Comparative Philology. March 2, 1903.
RALPH BARTON PERRY, Instructor in Philosophy. March 30, 1903.
AMON BENTON PLOWMAN, Assistant in Botany. March 30, 1903.
ARTHUR POPE, Assistant in Fine Arts. March 30, 1903.
MURRAY ANTHONY POTTER, Instructor in Romance Languages. March 30, 1903.
JAMES STURGIS PRAY, Instructor in Landscape Architecture. March 2, 1903.
HANS HUGO PRINGSHEIM, Assistant in Chemistry; Lecturer on Industrial Chemistry. June 23, 1903.
PAUL HECTOR PROVANDIE, Assistant in Hygiene. April 13, 1903.
HERBERT WILBUR RAND, Instructor in Zoölogy. March 30, 1903.
JAMES WALTER RANKIN, Assistant in English. June 23, 1903.
MOTTE ALSTON READ, Instructor in Physiography. March 30, 1903.
THOMAS HARRY REED, Assistant in Government. April 13, 1903.
WILLIAM HOWELL REED, Jr., Instructor in German. September 29, 1903.
FREDERICK WILLIAM REYNOLDS, Instructor in English. March 30, 1903.
HENRY MILNER RIDEOUT, Instructor in English. March 30, 1903.
GUY HALL ROBERTS, Assistant in Government. April 13, 1903.
DAVID CAMP ROGERS, Assistant in Philosophy. May 26, 1903.
LOUIS ROSS, Austin Teaching Fellow in Applied Mechanics. June 29, 1903.
FREDERICK WILLIAM RUSSE, Austin Teaching Fellow in Organic Chemistry. March 30, 1903.
ARTHUR WILLIAM RYDER, Instructor in Indic Philology. March 30, 1903.
SCHUYLER B SERVISS, Assistant in Physics. March 30, 1903.
ARTHUR BLISS SEYMOUR, Assistant at the Cryptogamic Herbarium. September 29, 1903.
ARTHUR ASAHEL SHURTLEFF, Instructor in Landscape Architecture. March 30, 1903.
MACY MILLMORE SKINNER, Instructor in German. March 30, 1903.
GRANT SMITH, Austin Teaching Fellow in Zoölogy. March 30, 1903.
JOSEPH LINDON SMITH, Instructor in Freehand Drawing. May 11, 1903.
PHILIP SIDNEY SMITH, Instructor in Geology. May 26, 1903.
WILLIAM BRACKETT SNOW, Instructor in Methods of Teaching French. April 27, 1903.
CHARLES MINER STEARNS, Assistant in English. March 30, 1903.
JOSEPH TRUMBULL STICKNEY, Instructor in Greek. March 23, 1903.
FREDERIC JESUP STIMSON, Lecturer on Tendencies of American Legislation. March 23, 1903.
HENRY LEROY STONE, Assistant in Music. March 30, 1903.
ALBERT MOREY STURTEVANT, Instructor in German. March 30, 1903.
WALTER DANA SWAN, Instructor in Architecture. March 30, 1903.

- WALTER SHELDON TOWER, Assistant in Physiography and Meteorology. June 8, 1903.
- JAMES WADDELL TUPPER, Instructor in English. March 30, 1903.
- FREDERICK JACKSON TURNER, Lecturer on American History. March 30, 1903.
- FREDERICK WARREN TURNER, Assistant in Shopwork. March 30, 1903.
- WILLIAM BARRETT UPDEGRAFF, Assistant in Mechanical Drawing. March 30, 1903.
- ROBERT P'ALFREY UTTER, Assistant in English. March 30, 1903.
- FRANK DE WITT WASHBURN, Assistant in the Architectural Library. March 30, 1903.
- HERMANN JULIUS WEBER, Austin Teaching Fellow in German. June 8, 1903.
- DAVID HUTTON WEBSTER, Austin Teaching Fellow in Economics. May 26, 1903.
- KENNETH GRANT TREMAINE WEBSTER, Instructor in English. March 30, 1903.
- EDGAR HUIDEKOPER WELLS, Instructor in English. March 30, 1903.
- ROGER CLARK WELLS, Assistant in Physical Chemistry. March 30, 1903.
- ROBERT MAXIMILIAN OTTOMAR WERNAER, Instructor in German. March 30, 1903.
- STEPHEN EDGAR WHITING, Instructor in Electrical Engineering. March 30, 1903.
- ARTHUR FISHER WHITTEM, Austin Teaching Fellow in Romance Languages. March 30, 1903.
- BERTEL GLIDDEN WILLARD, Instructor in Elocution. April 27, 1903.
- JAMES JACOB WOLFE, Austin Teaching Fellow in Botany. May 11, 1903.
- HARRY OSCAR WOOD, Assistant in Mineralogy and Petrography. April 27, 1903.
- JAMES HAUGHTON WOODS, Instructor in the Philosophical Systems of India. June 8, 1903.
- CHESTER WHITNEY WRIGHT, Assistant in Economics. March 30, 1903.
- BRUCE WYMAN, Lecturer on Legal Principles Applied to Industries. March 30, 1903.
- ROBERT MEARNS YERKES, Instructor in Psychology. March 30, 1903.

MEMBERS OF THE ADMINISTRATIVE BOARD OF HARVARD COLLEGE.

JUNE 23, 1903.

RICHARD COBB.	LEWIS JEROME JOHNSON.
ARCHIBALD CARY COOLIDGE,	CHARLES PALACHE.
GEORGE WASHINGTON CRAM.	CHARLES POMEROY PARKER.
JOHN HAYS GARDINER.	ROBERT DECOURCY WARD.
CHARLES BURTON GULICK.	JAMES KELSEY WHITTEMORE.
JOHN GODDARD HART.	ROBERT WHEELER WILLSON.
BYRON SATTERLEE HURLBUT, <i>Dean</i> .	JAY BACKUS WOODWORTH.
CHARLES HENRY CONRAD WRIGHT.	

MEMBERS OF THE ADMINISTRATIVE BOARD OF THE LAWRENCE SCIENTIFIC SCHOOL.

APPOINTED JUNE 29, 1903, UNLESS OTHERWISE STATED.

COMFORT AVERY ADAMS.	FRANK LOWELL KENNEDY.
WILLIAM ERNEST CASTLE.	JAMES LEE LOVE.
EUGENE ABRAHAM DARLING, Sept. 29, 1903.	ARTHUR ORLO NORTON.
	CHARLES ROBERT SANGER.
JOHN GODDARD HART, Sept. 29, 1903.	NATHANIEL SOUTHGATE SHALER, <i>Dean</i> .
IRA NELSON HOLLIS.	HENRY LLOYD SMYTH.
EDWARD CHARLES JEFFREY.	HERBERT LANGFORD WARREN.

MEMBERS OF THE ADMINISTRATIVE BOARD OF THE GRADUATE SCHOOL.

JUNE 29, 1903.

MAXIME BÔCHER.	GEORGE LYMAN KITTREDGE.
WILLIAM MORRIS DAVIS.	ABBOTT LAWRENCE LOWELL.
CHARLES LOEING JACKSON.	GEORGE FOOT MOORE.
HANS CARL GUNTHER VON JAGEMANN.	HUGO MÜNSTERBERG.
	JOHN HENRY WRIGHT, <i>Dean</i> .

PROCTORS.

[For 1902-03.]

HORACE FORBES BAKER.	October 27, 1902.
CHARLES BEARDSLEY.	March 2, 1903, for the remainder of the academic year.
PHILIP GREENLEAF CARLETON.	October 13, 1902.
ROBERT JACKSON CRAM.	January 26, 1903.
FREDERIC LOUIS FISCHER.	September 26, 1902.
ANDREW MARSHALL.	September 26, 1902.
GUY MURCHIE.	September 26, 1902.
ARTHUR WILLIAM RYDER.	September 26, 1902.
CLINTON HOMER SCOVELL.	October 13, 1902.
ROGER CLARK WELLS.	October 27, 1902.

[For 1903-04.]

APPOINTED SEPTEMBER 29, 1903, UNLESS OTHERWISE STATED.

BIRD THOMAS BALDWIN.	JUNE 23, 1903.	LYMAN KENNETH CLARK.	JUNE 23, 1903.
WILLIAM LESTER BARNES.		WILLIAM ARNOLD COLWELL.	
LYNN STALEY BEALS.		ROBERT JACKSON CRAM.	
DWIGHT ST. JOHN BOBB.		EARL CLEMENT DAVIS.	Divinity Hall,
EDWARD BOWDITCH, Jr.	JUNE 23, 1903.		JUNE 1, 1903.
JOSEPH GARDNER BRADLEY.		ROGER ERNST.	JUNE 23, 1903.
FREDERICK WALTON CARPENTER.		BERNARD CAPEN EWER.	
		JAMES ALFRED FIELD.	JUNE 23, 1903.

JAMES AUGUSTUS GEORGE.	GILBERT HOLLAND MONTAGUE.
JAMES WALTER GOLDTHWAIT. June 23, 1903.	CHARLES READ NUTTER. June 23, 1903.
WARWICK GREENE.	JAMES HORACE PATTEN.
CHESTER NOTES GREENOUGH.	ROBERT WILLIAM SAWYER, Jr. June 23, 1903.
DONALD GREGG. June 23, 1903.	CLINTON HOMER SCOVELL.
WILLIAM GEORGE LEE.	ARTHUR HENRY WEED. June 23, 1903.
ANDREW MARSHALL.	ROGER CLARK WELLS.
HAROLD WESTON MASON.	BARRETT WENDELL, Jr.
GILBERT SIMRALL MEEM, Jr.	HENRY AARON YEOMANS.

MEMBERS OF THE BOARD OF EXAMINATION PROCTORS.

NOVEMBER 10, 1902.

WILLIAM LESTER BARNES.	KENNETH LAMARTINE MARK.
ALBERT FRANCIS BLAKESLEE.	LEON CARROLL MARSHALL.
DWIGHT ST. JOHN BOBB.	JUNIUS LATHROP MERIAM.
FREDERIC BONNET, Jr.	FREDERIC WILLIAM MORRISON.
DANIEL FRANCIS CALHANE.	CHARLES READ NUTTER.
FREDERIC WALTON CARPENTER.	JAMES HORACE PATTEN.
HOWARD HASTINGS CARROLL.	AMOS WILLIAM PETERS.
LYMAN KENNETH CLARK.	FREDERICK WILLIAM REYNOLDS.
JOHN FELT COLE.	AUGUSTUS HUNT SHEARER.
ALDRICH DURANT.	GRANT SMITH.
GEORGE SHANNON FORBES.	PHILIP SIDNEY SMITH.
CHARLES EDMUND FRYER.	MALCOLM ENOS STICKNEY.
JAMES AUGUSTUS GEORGE.	WILLIAM EARLE STILLWELL.
JAMES WALTER GOLDTHWAIT.	ALBERT MOREY STURTEVANT.
LYMAN SAWIN HAPGOOD.	HENRY SMITH THOMPSON.
JOHN PERHAM HYLAN.	ROGER CLARK WELLS.
GORDON IRELAND.	HARRY OSCAR WOOD.
CHARLES JULIUS KULLMER.	ARTHUR DICKINSON WYMAN.
WALDO GIFFORD LELAND.	HENRY AARON YEOMANS.
MAURICE LAWRENCE MCCARTHY.	ROBERT MEARNS YERKES.

DIVINITY SCHOOL.

[Without limit of time, or for more than one year.]

JAMES HARDY ROPES, Bussey Professor of New Testament Criticism and Interpretation, March 30, 1903; Dexter Lecturer on Biblical Literature from September 1, 1903. September 29, 1903.

LAW SCHOOL.

[Without limit of time, or for more than one year.]

JAMES BARR AMES, Dane Professor of Law. January 26, 1903.
 JOSEPH HENRY BEALE, Jr., Bussey Professor of Law. May 26, 1903.
 CHARLES FRANCIS DORR BELDEN, Assistant Librarian of the Law School from September 1, 1902. September 26, 1902.

FREDERIC LOUIS FISCHER, Secretary of the Faculty of Law from September 1, 1902. September 26, 1902.

EUGENE WAMBAUGH, Langdell Professor of Law. May 26, 1903.

SAMUEL WILLISTON, Weld Professor of Law. May 26, 1903.

BRUCE WYMAN, Assistant Professor of Law for five years from September 1, 1903. April 13, 1903.

[For 1902-03.]

RUFUS WILLIAM SPRAGUE, JR., Lecturer on New York Practice for the remainder of the academic year. January 12, 1903.

[For 1903-04.]

WALLACE BRETT DONHAM, Lecturer on Equity. June 8, 1903.

FREDERICK GREEN, Lecturer on Admiralty. June 8, 1903.

WILLIAM RODMAN PEABODY, Lecturer on Criminal Law. April 13, 1903.

EZRA RIPLEY THAYER, Lecturer on Massachusetts Practice. April 13, 1903.

MEDICAL SCHOOL.

[Without limit of time, or for more than one year.]

HENRY PICKERING BOWDITCH, George Higginson Professor of Physiology. December 29, 1902.

EDWARD HICKLING BRADFORD, Professor of Orthopedic Surgery. March 2, 1903.

HERBERT LESLIE BURRELL, Professor of Clinical Surgery. March 2, 1903.

WALTER BRADFORD CANNON, Assistant Professor of Physiology for five years from September 1, 1902. November 24, 1902.

CHARLES HARRINGTON, Assistant Professor of Hygiene for five years from September 1, 1903. June 1, 1903.

JOHN HILDRETH MCCOLLOM, Assistant Professor of Contagious Diseases for five years from September 1, 1903. March 9, 1903.

MAURICE HOWE RICHARDSON, Professor of Clinical Surgery from September 1, 1903. March 2, 1903.

[For 1902-03.]

GEORGE SAMUEL AMSDEN, Assistant in Physiology. December 29, 1902.

STYLVESTER JUDD BEACH, Assistant in Physiology. December 29, 1902.

JOHN NELSON COOLIDGE, Assistant in Clinical Medicine for the second half-year. January 26, 1903.

NATHANIEL WALES FAXON, Assistant in Physiology. December 29, 1902.

SAMUEL STEEN MAXWELL, Austin Teaching Fellow in Physiology. September 26, 1902.

THOMAS ORDWAY, Assistant in Physiology. December 29, 1902.

JOSEPH HERSEY PRATT, Assistant in the Theory and Practice of Physic. October 13, 1902.

WILDER TILESTON, Assistant in Chemistry for the second half-year. January 12, 1903.

JOSEPH DEUTSCH WEIS, Assistant in Bacteriology. October 27, 1902.

[For 1903-04.]

- SEABURY WELLS ALLEN, Assistant in Anatomy. June 8, 1903.
CARL LUCAS ALSBERG, Assistant in Physiological Chemistry. June 8, 1903.
GEORGE SHERWIN CLARKE BADGER, Assistant in the Theory and Practice of Physic. June 8, 1903.
FRANKLIN GREENE BALCH, Assistant in Surgery. June 8, 1903.
HENRY HARRIS AUBREY BEACH, Lecturer on Surgery. June 8, 1903.
NATHANIEL LEANDER BERRY, Jr., Assistant in Bacteriology. June 8, 1903.
JOHN BAPST BLAKE, Instructor in Surgery. June 8, 1903.
ELLIOTT GRAY BRACKETT, Assistant in Orthopedics. June 8, 1903.
JOHN LEWIS BREMER, Instructor in Histology and Embryology. June 8, 1903.
GEORGE WASHINGTON WALES BREWSTER, Assistant in Surgery. June 8, 1903.
WILLIAM ALLEN BROOKS, Assistant in Surgery. June 8, 1903.
HERBERT RUTHERFORD BROWN, Austin Teaching Fellow in Comparative Pathology. June 23, 1903.
EDWARD MARSHALL BUCKINGHAM, Clinical Instructor in Pediatrics. June 8, 1903.
CHARLES SHOREY BUTLER, Assistant in Anatomy. June 8, 1903.
RICHARD CLARKE CABOT, Instructor in Clinical Medicine. June 8, 1903.
DAVID CHEEVER, Assistant in Anatomy. June 8, 1903.
HENRY ASBURY CHRISTIAN, Instructor in Pathology. June 8, 1903.
EDMUND WRIGHT CLAP, Assistant in Ophthalmology. June 8, 1903.
FARRAR COBB, Assistant in Surgery. June 8, 1903.
ERNEST AMORY CODMAN, Assistant in Surgery. June 8, 1903.
JOHN MATTHEW CONNOLLY, Assistant in Chemistry. June 8, 1903.
ALGERNON COOLIDGE, Jr., Clinical Instructor in Laryngology. June 8, 1903.
JOHN NELSON COOLIDGE, Assistant in Clinical Medicine. June 8, 1903.
FREDERIC JAY COTTON, Assistant in Surgery. June 8, 1903.
EDWARD COWLES, Clinical Instructor in Mental Diseases. June 8, 1903.
GEORGE ARTHUR CRAIGIN, Assistant in Pediatrics. June 8, 1903.
LE ROI GODDARD CRANDON, Assistant in Surgery. June 8, 1903.
EUGENE ANTHONY CROCKETT, Assistant in Otology. June 8, 1903.
ELBRIDGE GERRY CUTLER, Instructor in the Theory and Practice of Physic. June 8, 1903.
JOHN DANE, Assistant in Orthopedics. June 8, 1903.
LINCOLN DAVIS, Instructor in Anatomy. June 8, 1903.
THOMAS AMORY DE BLOIS, Clinical Instructor in Laryngology. June 8, 1903.
FRANCIS PARKMAN DENNY, Assistant in Bacteriology. June 8, 1903.
JAMES CROWLEY DONOGHUE, Assistant in Histology. June 8, 1903.
SAMUEL HOLMES DURGIN, Lecturer on Hygiene. June 8, 1903.
EDWIN WELLES DWIGHT, Instructor in Legal Medicine. June 8, 1903.
JOHN WHELOCK ELLIOT, Lecturer on Surgery. June 8, 1903.
ROBERT LEONARD EMERSON, Instructor in Physiological Chemistry. June 8, 1903.
WILLIAM ROBEY PATTEN EMERSON, Assistant in Histology. June 8, 1903.
EUGENE ELLSWORTH EVERETT, Assistant in Bacteriology. June 8, 1903.
JOHN WOODFORD FARLOW, Clinical Instructor in Laryngology. June 8, 1903.
WILLIAM EDWARD FAULKNER, Assistant in Surgery. June 8, 1903.
ELISHA FLAGG, Assistant in Anatomy. June 8, 1903.

- LEO VICTOR FRIEDMAN Assistant in Obstetrics. June 8, 1903.
LANGDON FROTHINGHAM, Austin Teaching Fellow in Bacteriology. June 23, 1903.
GEORGE WASHINGTON GAY, Lecturer on Surgery. June 8, 1903.
JOEL ERNEST GOLDTHWAIT, Assistant in Orthopedics. June 8, 1903.
CHARLES MONTRAVILLE GREEN, Secretary of the Faculty of Medicine. June 8, 1903.
ROBERT BATTEY GREENOUGH, Assistant in Surgery. June 8, 1903.
PHILIP HAMMOND, Assistant in Otology. June 8, 1903.
FRANCIS BISHOP HARRINGTON, Lecturer on Surgery. June 8, 1903.
HENRY HILL HASKELL, Assistant in Ophthalmology. June 8, 1903.
GEORGE HAVEN, Instructor in Gynaecology. June 8, 1903.
HENRY FOX HEWES, Instructor in Clinical Chemistry. June 8, 1903.
FRANK ALBERT HIGGINS, Instructor in Obstetrics. June 8, 1903.
HIBBERT WINSLOW HILL, Instructor in Bacteriology. June 8, 1903.
JOSHUA CLAPP HUBBARD, Assistant in Surgery. June 8, 1903.
EDWIN EVERETT JACK, Assistant in Ophthalmology. June 8, 1903.
HENRY JACKSON, Instructor in Clinical Medicine. June 8, 1903.
JAMES MARSH JACKSON, Assistant in Clinical Medicine. June 8, 1903.
DANIEL FISKE JONES, Assistant in Surgery. June 8, 1903.
JAMES OSCAR JORDAN, Assistant in Materia Medica. June 8, 1903.
ELLIOTT PROCTOR JOSLIN, Assistant in the Theory and Practice of Physic. June 8, 1903.
PHILIP COOMBS KNAPP, Clinical Instructor in Diseases of the Nervous System. June 8, 1903.
MAYNARD LADD, Assistant in Pediatrics. June 8, 1903.
EDWARD BINNEY LANE, Clinical Instructor in Mental Diseases. June 8, 1903.
FREDERIC THOMAS LEWIS, Instructor in Histology and Embryology. June 8, 1903.
EDWIN ALLEN LOCKE, Assistant in Clinical Medicine. June 8, 1903.
HOWARD AUGUSTUS LOTHROP, Instructor in Surgery. June 8, 1903.
ROBERT WILLIAMSON LOVETT, Assistant in Orthopedics. June 8, 1903.
FRED BATES LUND, Assistant in Surgery. June 8, 1903.
GEORGE BURGESS MAGRATH, Assistant in Pathology. June 8, 1903.
HENRY ORLANDO MARCY, Jr., Assistant in Anatomy. June 8, 1903.
SAMUEL STEEN MAXWELL, Instructor in Physiology. June 8, 1903.
SAMUEL JASON MIXTER, Lecturer on Surgery. June 8, 1903.
GEORGE HOWARD MONKES, Lecturer on Surgery. June 8, 1903.
JOHN LOVETT MORSE, Instructor in Pediatrics. June 8, 1903.
HARRIS PEYTON MOSHER, Assistant in Anatomy. June 8, 1903.
JAMES GREGORY MUMFORD, Instructor in Surgery. June 8, 1903.
JOHN CUMMINGS MUNRO, Lecturer on Surgery. June 8, 1903.
FRED TOWSLEY MURPHY, Assistant in Anatomy. June 8, 1903.
FRANKLIN SPILMAN NEWELL, Assistant in Obstetrics and in Gynaecology. June 8, 1903.
EDWARD HALL NICHOLS, Instructor in Surgical Pathology. June 8, 1903.
CALVIN GATES PAGE, Assistant in Bacteriology. June 8, 1903.
HENRY JOSEPH PERRY, Assistant in Bacteriology. June 8, 1903.
CHARLES ALLEN PORTER, Instructor in Surgery. June 8, 1903.
ABNER POST, Instructor in Syphilis. June 8, 1903.

- JOSEPH HERSEY PRATT, Assistant in the Theory and Practice of Physic. June 8, 1903.
- WILLIAM HERBERT PRESCOTT, Assistant in Clinical Medicine. June 8, 1903.
- ALEXANDER QUACKENBOSCH, Assistant in Ophthalmology. June 8, 1903.
- FRANK LINDEN RICHARDSON, Austin Teaching Fellow in Surgery. June 23, 1903.
- WILLIAM HENRY ROBET, Jr., Assistant in Bacteriology. June 8, 1903.
- DAVID DANIEL SCANNELL, Assistant in Anatomy. June 8, 1903.
- FREDERICK ROBERTSON SIMS, Assistant in Pathology. June 8, 1903.
- CHARLES MORTON SMITH, Assistant in Syphilis. June 8, 1903.
- WILLIAM HENRY SMITH, Assistant in Clinical Medicine. June 8, 1903.
- FRED MAURICE SPALDING, Assistant in Ophthalmology. June 8, 1903.
- MYLES STANDISH, Instructor in Ophthalmology. June 8, 1903.
- ARTHUR KINGSBURY STONE, Assistant in the Theory and Practice of Physic. June 8, 1903.
- MALCOLM STORER, Assistant in Gynaecology. June 8, 1903.
- HOWARD TOWNSEND SWAIN, Assistant in Obstetrics. June 8, 1903.
- EWING TAYLOR, Austin Teaching Fellow in Histology and Embryology. June 23, 1903.
- EDWARD WYLLYS TAYLOR, Instructor in Neuropathology. June 8, 1903.
- PAUL THORNDIKE, Instructor in Genito-Urinary Surgery. June 8, 1903.
- ERNEST EDWARD TYZZER, Assistant in Pathology. June 8, 1903.
- MAURICE PAUL OCTAVE VEJUX-TYRDE, Instructor in Pharmacology. June 8, 1903.
- HERMAN FRANK VICKERY, Instructor in Clinical Medicine. June 8, 1903.
- RICHARD GOODWIN WADSWORTH, Assistant in Anatomy. June 8, 1903.
- DAVID HAROLD WALKER, Assistant in Hygiene. June 8, 1903.
- GEORGE LINCOLN WALTON, Clinical Instructor in Diseases of the Nervous System. June 8, 1903.
- GEORGE ARTHUR WATERMAN, Assistant in Neurology. June 8, 1903.
- FRANCIS SEDGWICK WATSON, Lecturer on Genito-Urinary Surgery. June 8, 1903.
- CHARLES JAMES WHITE, Instructor in Dermatology. June 8, 1903.
- FRANKLIN WARREN WHITE, Assistant in the Theory and Practice of Physic. June 8, 1903.
- GEORGE SHATTUCK WHITESIDE, Assistant in Anatomy. June 8, 1903.
- CHARLES FRANCIS WITHINGTON, Instructor in Clinical Medicine. June 8, 1903.
- JAMES HOMER WRIGHT, Instructor in Pathology. June 8, 1903.
- ERNEST BOYEN YOUNG, Assistant in Gynaecology. June 8, 1903.

MEMBERS OF THE ADMINISTRATIVE BOARD OF THE MEDICAL SCHOOL.

[For 1902-03.]

OCTOBER 13, 1902.

FRANKLIN DEXTER.	WILLIAM LAMBERT RICHARDSON, <i>Dean</i> .
CHARLES MONTRAVILLE GREEN.	FREDERICK CHEEVER SHATTUCK.
CHARLES HARRINGTON.	JOHN COLLINS WARREN.
FRANK BURN MALLORY.	WILLIAM FISKE WHITNEY.
EDWARD STICKNEY WOOD.	

[For 1903-04.]

JUNE 23, 1903.

WALTER BRADFORD CANNON.	WILLIAM LAMBERT RICHARDSON, <i>Dean</i> .
CHARLES MONTRAVILLE GREEN.	FREDERICK CHEEVER SHATTUCK.
CHARLES HARRINGTON.	JOHN COLLINS WARREN.
FRANK BURN MALLORY.	WILLIAM FISKE WHITNEY.
EDWARD STICKNEY WOOD.	

DENTAL SCHOOL.

[For 1902-03.]

JOHN WESLEY ESTABROOKS, Instructor in Operative Dentistry for the remainder of the academic year. March 30, 1903.

MELVILLE FORREST ROGERS, Instructor in Operative Dentistry. January 12, 1903.

[For 1903-04.]

LAWRENCE WILLS BAKER, Assistant in Orthodontia. June 8, 1903.

EDWIN CARTER BLAISDELL, Instructor in Operative Dentistry. June 8, 1903.

FREDERICK BRADLEY, Instructor in Operative Dentistry. June 8, 1903.

ASHER HARRIMAN ST. CLAIR CHASE, Assistant Demonstrator of Mechanical Dentistry. June 8, 1903.

ERNEST HOWARD CHUTE, Instructor in Mechanical Dentistry. June 8, 1903.

DWIGHT MOSES CLAPP, Clinical Lecturer on Operative Dentistry. June 8, 1903.

HAROLD DEWITT CROSS, Demonstrator of Mechanical Dentistry. June 8, 1903.

HORACE AMOS DAVIS, Instructor in Operative Dentistry. June 8, 1903.

DWIGHT WARD DICKINSON, Assistant Demonstrator of Operative Dentistry. June 8, 1903.

JOHN DANA DICKINSON, Clinical Instructor in Mechanical Dentistry. June 8, 1903.

JOHN WALKER DICKINSON, Instructor in Mechanical Dentistry. June 8, 1903.

FORREST GREENWOOD EDDY, Instructor in Operative Dentistry. June 8, 1903.

ARTHUR WARREN ELDRED, Instructor in Mechanical Dentistry. June 8, 1903.

SAMUEL TUTTLE ELLIOTT, Instructor in Operative Dentistry. June 8, 1903.

JOHN IRVING ESGATE, Instructor in Operative Dentistry. June 8, 1903.

JOHN WESLEY ESTABROOKS, Instructor in Mechanical Dentistry. June 8, 1903.

EDWIN LINWOOD FARRINGTON, Instructor in Operative Dentistry. June 8, 1903.

JAMES AUSTIN FURFEY, Instructor in Operative Dentistry. June 8, 1903.

HARRY LINWOOD GRANT, Instructor in Mechanical Dentistry. June 8, 1903.

AMOS IRVING HADLEY, Instructor in Mechanical Dentistry. June 8, 1903.

FRANCIS HERBERT HARDING, Instructor in Operative Dentistry. June 8, 1903.

ERNEST JEWETT HART, Instructor in Extracting and Anaesthesia. June 8, 1903.

THOMAS BERNARD HAYDEN, Instructor in Mechanical Dentistry. June 8, 1903.

ELLIS PROCTOR HOLMES, Instructor in Operative Dentistry. June 8, 1903.

ELBRIDGE DECOSMOS KING, Instructor in Operative Dentistry. June 8, 1903.

MARQUIS D LITIG, Instructor in Operative Dentistry. June 8, 1903.

ROBERT JOHN McMEEKIN, Demonstrator of Operative Dentistry. June 8, 1903.

CHARLES WINTHROP MCPHERSON, Instructor in Operative Dentistry. June 8, 1903.

ELMER JOSEPH MARSTON, Instructor in Operative Dentistry. June 8, 1903.

GEORGE HOWARD MONKS, Instructor in Surgical Pathology. June 8, 1903.

LESLIE HERBERT NAYLOR, Instructor in Operative Dentistry. June 8, 1903.

HARRY SNOW PARSONS, Instructor in Mechanical Dentistry. June 8, 1903.

JOSEPH TOTTEN PAUL, Instructor in Operative Dentistry. June 8, 1903.

CHARLES ERNEST PERKINS, Instructor in Operative Dentistry. June 8, 1903.

CHARLES WILLIAM RODGERS, Assistant in Dental Materia Medica. June 8, 1903.

MELVILLE FORREST ROGERS, Instructor in Operative Dentistry. June 8, 1903.

HARRY BENJAMIN SHUMAN, Assistant in Oral Surgery. June 8, 1903.

HENRY CARLTON SMITH, Assistant in Chemistry. June 8, 1903.

DAVID FREDERICK SPINNEY, Instructor in Mechanical Dentistry. June 8, 1903.

WILLIAM DANIEL SQUAREBRIGS, Instructor in Extracting and Anaesthesia. June 8, 1903.

WILFRED HARLOW STARRATT, Instructor in Operative Dentistry. June 8, 1903.

ARTHUR HENRY STODDARD, Clinical Lecturer on Mechanical Dentistry. June 8, 1903.

EZRA FLETCHER TAFT, Instructor in Operative Dentistry. June 8, 1903.

EDWARD WYLLYS TAYLOR, Instructor in Neurology. June 8, 1903.

EVAN PARKER WENTWORTH, Instructor in Operative Dentistry. June 8, 1903.

JULIUS GEORGE WILLIAM WERNER, Clinical Instructor in Operative Dentistry. June 8, 1903.

ROBERT WHITEHILL, Instructor in Operative Dentistry. June 8, 1903.

MEMBERS OF THE ADMINISTRATIVE BOARD OF THE DENTAL SCHOOL.

JUNE 23, 1903.

WALDO ELIAS BOARDMAN.

WILLIAM PARKER COOKE.

CHARLES ALBERT BRACKETT.

THOMAS FILLEBROWN.

EDWARD CORNELIUS BRIGGS.

WILLIAM BARKER HILLS.

DWIGHT MOSES CLAPP.

WILLIAM HENRY POTTER.

EUGENE HANES SMITH, *Dean*.

BUSSEY INSTITUTION.

[*For the Calendar Year 1903.*]

JOHN GEORGE JACK, Lecturer at the Arnold Arboretum. April 13, 1903.

[*For 1903-04.*]

FRANK THOMPSON DILLINGHAM, Assistant in Chemistry. April 27, 1903.

JOHN HAMILTON ROBINETTE, Assistant in Agriculture. April 27, 1903.

CHARLES STEPHEN SHAUGHNESSY, Instructor in Mathematics and Surveying. April 27, 1903.

OBSERVATORY.

[*Without limit of time, or for more than one year.*]

JOHN AUGUSTINE DUNNE, Assistant at the Observatory from September 1, 1902.
November 24, 1902.

OLIVER CLINTON WENDELL, Assistant Professor of Astronomy for five years
from September 1, 1903.

OTHER APPOINTMENTS.

[*Without limit of time, or for more than one year.*]

ALEXANDER AGASSIZ, Chairman of the Committee on the University Museum
from September 1, 1902. December 29, 1902.

ROBERT LEMOYNE BARRETT, Associate of the University Museum in Geography.
December 1, 1902.

HERBERT HAVILAND FIELD, Associate of the University Museum in Zoölogy.
December 1, 1902.

KUNO FRANCKE, Curator of the Germanic Museum. October 13, 1902.

ANDREW GRAY WEEKS, JR., Associate of the University Museum in Zoölogy.
December 1, 1902.

THOMAS AUGUSTUS JAGGAR, JR., Regent from September 1, 1903. September
29, 1903.

[*For 1903-04.*]

LYNN STALEY BEALS, Auditor of Randall Hall Association. June 23, 1903.

FRANCIS DOHS, Instructor in Gymnastics. March 30, 1903.

PREACHERS TO THE UNIVERSITY.

MAY 26, 1903.

LYMAN ABBOTT.

HENRY VAN DYKE.

FRANCIS BROWN.

WILLIAM WALLACE FENN.

FLOYD WILLIAMS TOMKINS.

COMMITTEE ON THE REGULATION OF ATHLETIC SPORTS.

[*For 1902-03.*]

OCTOBER 13, 1902.

Faculty Members.

IRA NELSON HOLLIS.

HORATIO STEVENS WHITE.

[*For 1903-04.*]

MAY 26, 1903.

Faculty Members :

Graduate Members :

ABRAHAM PIATT ANDREW.

NORMAN WILLIAMS BINGHAM, JR.

ARCHIBALD CARY COOLIDGE.

EDWARD HALL NICHOLS.

HORATIO STEVENS WHITE.

THOMAS NELSON PERKINS.

TRUSTEES OF THE MUSEUM OF FINE ARTS.

NOVEMBER 24, 1902.

WILLIAM STURGIS BIGELOW.

ARTHUR TRACY CABOT.

JOHN TEMPLEMAN COOLIDGE, Jr.

TRUSTEES OF HARVARD UNION.

OCTOBER 13, 1902.

ROBERT BACON.

IRA NELSON HOLLIS.

SEPTEMBER 29, 1903.

JAMES JACKSON STORROW.

WILLIAM ROSCOE THAYER.

ORDINARY DEGREES CONFERRED IN 1899-1903.

	1899.	1900.	1901.	1902.	1903.
Bachelors of Arts	443	404	457	422	511
Bachelors of Arts out of course	25	15	26	32	36
Bachelors of Science	46	59	75	76	101
Bachelors of Science out of course	11	6	4	7	4
Bachelors of Divinity	2	5	2	5	4
Bachelors of Divinity out of course	0	0	0	1	1
Bachelors of Laws	109	126	136	146	157
Bachelors of Laws out of course	8	8	9	16	6
Bachelors of Agricultural Science	0	0	2	5	6
Doctors of Medicine	108	130	116	130	109
Doctors of Medicine out of course	1	0	4	1	3
Doctors of Dental Medicine	36	33	29	32	27
Doctors of Dental Medicine out of course	1	0	0	0	0
Doctors of Veterinary Medicine	8	7	6	0	0
Doctors of Veterinary Medicine out of course	1	0	1	1	0
Masters of Arts	118	125	119	110	117
Masters of Arts out of course	6	9	6	10	7
Masters of Science	6	1	7	8	6
Masters of Science out of course	0	0	3	0	1
Doctors of Philosophy	23	35	29	28	28
Doctors of Science	1	1	0	3	1
Totals	953	964	1031	1033	1125

PUBLICATIONS OF THE MUSEUM OF COMPARATIVE
ZOOLOGY FOR THE ACADEMIC YEAR 1902-03.

Bulletin :—

Vol. XXXVIII. Geological Series, Vol. V.

No. 7. River Terraces in New England. By W. M. DAVIS. 68 pp.
October, 1902.No. 8. The Foraminifera and other Organisms in the Raised Reefs of
Fiji. By R. L. SHERLOCK. 19 pp. March, 1903.

Vol. XXXIX.

No. 4. Illustrations of Odonata: Argia. By HERMANN A. HAGEN. With a List and Bibliography of the Species. By PHILIP P. CALVERT. 20 pp. 2 Plates. November, 1902.

No. 5. Crabs from the Maldivé Islands. By MARY J. RATHBUN. 18 pp. 1 Plate. December, 1902.

No. 6. Birds and Mammals from Honduras. By OUTRAM BANGS. 21 pp. July, 1903.

No. 7. Carboniferous Fishes from the Central Western States. By C. R. EASTMAN. 66 pp. 5 Plates. July, 1903.

Vol. XL.

No. 3. Contributions from the Zoölogical Laboratory. No. 135. The Development of the Definitive Feather. By R. M. STRONG. 41 pp. 9 Plates. October, 1902.

No. 4. Contributions from the Zoölogical Laboratory. No. 137. The Heredity of Sex. By W. E. CASTLE. 32 pp. January, 1903.

No. 5. Contributions from the Zoölogical Laboratory. No. 138. The Optic Chiasma in Teleosts and its bearing on the Asymmetry of the Heterosanata (Flatfishes). By G. H. PARKER. 24 pp. 1 Plate. January, 1903.

No. 6. Contributions from the Zoölogical Laboratory. No. 141. Polydactylism in Man and the Domestic Animals, with especial Reference to Digital Variations in Swine. By C. W. PRENTISS. 72 pp. 22 Plates. April, 1903.

Vol. XLI.

No. 1. Birds of the Cape Region of Lower California. By WILLIAM BREWSTER. 242 pp. 1 Map. September, 1902.

Vol. XLII. Geological Series, Vol. VI.

No. 1. An Excursion to the Plateau Province of Utah and Arizona. By W. M. DAVIS. 50 pp. 7 Plates. June, 1903.

No. 2. The Chemical Composition of Limestones from upraised Coral Islands, with Notes on their Microscopical Structures. By ERNEST W. SKEATS. 76 pp. June, 1903.

Memoirs:—

Vol. XXVI.

No. 4. Reports on the Scientific Results of the Expedition to the Tropical Pacific, 1899-1900. V. Sharks' Teeth and Cetacean Bones. By C. R. EASTMAN. 14 pp. 3 Plates. June, 1903.

Vol. XXVIII.

Reports on the Scientific Results of the Expedition to the Tropical Pacific, 1899-1900. IV. The Coral Reefs of the Tropical Pacific. By ALEXANDER AGASSIZ. 33,410 pp. 238 Plates. February, 1903.

Report:—

1901-02. 32 pp. 2 Plates. December, 1903.

**SUNDRY PAYMENTS MADE FROM UNRESTRICTED IN-
COME, AND FROM THE UNRESTRICTED FUNDS
CALLED STOCK ACCOUNT AND INSURANCE AND
GUARANTY FUND, BETWEEN 1826-27 AND 1902-03
INCLUSIVE.**

*All these payments were made after August 31, 1862, except \$10,667.20
paid on account of Dane Hall in 1834-35, and \$25,419.17
paid on account of Observatory in 1852-53.*

Year.			
	Dane Hall:		
1834-35	Original cost,	\$10,667.20	
1891-92	Alterations,	4,173.22	
1899-1900	“ (for Harvard Coöperative Society),	2,444.08	\$17,284.50
1852-53	Observatory, in excess of subscriptions,		25,419.17
1862-63	Appleton Chapel, “ “		1,406.60
	Rogers Building—Gymnasium:		
1862-63	Cost in excess of gift,	\$1,534.21	
1882-83	Taken for College uses, scholarship estab- lished,	3,180.50	
1901-02	Alterations for Germanic Museum,	399.04	
1902-03	“ “ “	1,565.00	6,678.75
	Boylston Hall:		
1862-63	Cost in excess of funds and gifts available,	\$10,790.72	
1872-75	Alterations in excess of gifts,	11,810.00	
1891-92	“ Lecture room and organic labo- ratory,	8,806.50	
1892-93	“ Gallery,	449.97	
1895-96	“ Basement laboratory,	7,027.09	
1898-99	“	970.14	
1901-02	“ Southerly extension,	35.23	
1902-03	“ “ “	6,205.29	
1902-03	Furnishing “ “	1,417.61	47,512.55
1869-70	Harvard and Massachusetts Halls remodelled,		19,966.87
1871-72	Holworthy Hall, roof raised (estimated),		3,000.00
1871-73	Moving Dane Hall and the Steward's (Bur- sar's) office, wing of Wadsworth House, on account of the building of Matthews Hall,		9,210.42
1874-75	Former Hospital (Jarvis Street),		3,502.85
1874-75	Stone walks in the College Yard,	\$4,847.33	
1880-81	Brick and stone walks in the College Yard,	2,072.64	6,919.97
1875-77	Grading Jarvis Field, Holmes Field, and the Delta,	\$6,174.94	
1889-90	Grading field for athletics in rear of Divinity Hall,	964.93	7,139.87
	Amount carried forward,		\$148,041.55

325

	Amount brought forward,	\$148,041.55	
	Gore Hall :		
1875-78	Extension (excluding interest during construction, \$6,098.71),	\$89,012.68	
1894-95	Alterations, stacks and reading room,	22,239.55	
1895-96	" and ventilation,	1,208.05	112,460.28
1876-77	Delta fence,		3,990.00
1879-80	Chemical engine, given to City of Cambridge, Steam plant, ventilation, plumbing, etc., etc., installations :		3,000.00
1880-81	University steam plant, plumbing, etc. (est.),	\$10,000.00	
1892-93	Plumbing (Hollis, Stoughton, Holworthy),	1,451.19	
1894-95	Heating entries (dormitories),	678.39	
1897-98	Showers baths, steam plant improvements, .	955.44	
1898-99	" " " " "	15,894.66	
1898-99	Ventilation,	16,174.58	
1899-1900	"	17,285.21	
1899-1900	Steam plant, addition (Sever),	1,651.67	64,091.14
1888-89	Phillips Brooks House, tunnel and steam connections,		971.90
	Expositions :		
1892-94	Chicago, World's Fair,	\$11,856.04	
1894-95	Atlanta,	1,228.85	
1899-1902	Paris,	1,008.14	
1900-03	Buffalo,	175.39	14,268.42
1890-91	Cases for Semitic collections,		3,000.00
1893-94	Lady Mowlson Scholarship re-established, .		5,000.00
1894-98	Repayments to Museum of Comp. Zoölogy, .		29,750.00
1895-96	Hemenway Gymnasium, asphalt court, . . .		4,882.36
	Club House (Jarvis Street) :		
1889-90	Moving to make room for Carey Building,	\$853.02	
1895-96	Alterations,	1,556.76	2,409.78
	University Hall :		
1895-96	Alterations,	\$859.95	
1896-97	"	5,981.15	6,841.10
	Bursar's Office — Dane Hall :		
1898-99	Installation,	\$748.54	
1899-1900	"	1,157.69	1,906.23
1900-01	Carpenter shops, alterations and additions, .		1,404.78
1900-01	Henry C. Warren House, moving and alterations,		3,368.78
1901-02	Moving Nichols House, Kirkland Street, . .		1,570.50
1901-03	University Museum, extension, furnishing, .		5,882.98
1902-03	Telephone exchange, installation,		1,957.49
1902-03	Moving Brimmer window,		1,000.00
	Department debts and annual deficits :		
1895-96	Lawrence Scientific School, debt,	\$10,473.15	
1895-1903	School of Veterinary Medicine, deficits, .	28,753.66	
1901-03	" " " debt,	20,406.01	59,632.82
	Amount carried forward,	\$475,429.41	

	Amount brought forward,	\$475,429.41	
1894-95	Conant Hall, construction, from the income thereof,		5,095.58
1894-95	Perkins Hall, construction, from the income thereof,		4,805.43
1895-1903	Surveys and plans,		4,131.50
1868-1903	Sewer assessments,		5,415.87
1868-1903	Sidewalk "		3,367.00
	Foxcroft House :		
1899-1900	Changing rear extension (to make students' rooms),	\$1,235.84	
1901-02	Moving to make room for New Lect. Hall,	2,365.83	3,601.67
1900-01	Fogg Museum, payment made to restore the William Hayes Fogg Fund to \$50,000,		2,829.91
			<u>\$504,676.37</u>

SURPLUSES AND DEFICITS, 1826-27 TO 1902-03.

Items marked * were carried to the Insurance and Guaranty Fund. All other items were carried to the Stock Account.

The following surpluses, which are entered in the table, were appropriated in the years of their occurrence :—

For alterations in Boylston Hall :—

1872-73	\$1,424.51
1873-74	4,686.31
1874-75	4,199.18
	\$10,310.00

For alterations in Gore Hall, 1894-95 22,239.55

For payment, in part, of the debt of the School of Veterinary Medicine, 1901-02 10,291.11

The deficits for 1875-76 and 1877-78 and the surplus for 1876-77 are given as they occurred, instead of being dealt with through a suspense account, as shown in the Treasurer's Annual Statements.

The income of the Stock Account for each of the years from 1887-88 to 1890-91, inclusive, 1893-94 and 1894-1895, was added to the capital, but was really surplus income, in so far as it exceeded any deficit for its year, which was mentioned in the Treasurer's Annual Statement. In this table, this income is added to the stated surplus of its year, or the balance thereof, after deducting the stated deficit, is entered as a surplus.

SURPLUSES AND DEFICITS.

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Year.	Surplus.	Deficit.	Year.	Surplus.	Deficit.
1826-27 . . .		\$4,037.22	Bro't forward, \$117,270.92		\$36,039.28
28 . . .		352.93	1866-67 . . .		2,818.23
29 . . . \$9,710.74			68 . . .		7,080.98
30 . . .		147.14	69 . . .	1,877.12	
31 . . .		4,438.39	70* } .		{ 10,000.00
32 . . .		92.94	70 } .		{ 1,612.81
33 . . .	2,484.83		71 . . .		4,614.33
34 . . .		877.70	72 . . .		11,444.30
35 . . .	11,786.38		73 . . .	1,424.51	
36 . . .	7,277.81		74 . . .	4,686.31	
37 . . .	2,669.77		75 . . .	4,199.18	
38 . . .	2,648.34		76 . . .		649.21
39 . . .	3,365.64		77 . . .	714.49	
40 . . .		774.93	78 . . .		6,439.93
41 . . .	4,975.76		79 . . .	708.99	
42 . . .		5,222.06	80 . . .		9,557.27
43 . . .	4,418.01		81 . . .		34,469.19
44 . . .	7,115.53		82 . . .		14,738.64
45 . . .	4,587.45		83 . . .	2,713.27	
46 . . .	345.77		84 . . .		271.17
47 . . .		389.38	85 . . .	1,953.43	
48 . . .	234.16		86 . . .	2,999.46	
49 . . .	7,284.95		87 . . .		7,206.68
50 . . .	805.68		88 . . .	7,387.60	
51 . . .	2,872.23		89 . . .	4,819.25	
52 . . .	6,827.58		90 . . .	10,380.13	
53 . . .	3,852.49		91 . . .	4,833.83	
54 . . .	1,202.18		92 . . .		6,432.88
55 . . .	1,438.03		93 . . .		25,181.26
56 . . .	1,677.80		94 . . .	3,723.08	
57* . . .	3,204.90		95 . . .	26,648.95	
58* . . .		1,142.71	96 . . .		9,426.05
59* . . .		2,732.87	97 . . .		18,370.23
60* . . .		3,495.29	98 . . .		3,846.32
61* . . .		6,650.42	99 . . .		45,348.95
62* . . .		4,540.43	1900 } .		{ 24,971.16
63* . . .		1,144.87	1900* } .		{ 11,698.35
64* . . .	328.05		01* . . .	2,347.91	
65* . . .	12,688.22		02* . . .	10,291.11	
66* . . .	13,468.62		03* . . .		40,403.07
Forward,	\$117,270.92	\$36,039.28		\$208,979.54	\$332,620.29

HARVARD DINING ASSOCIATION.

AVERAGE COST PER MAN PER WEEK.

	1903.	1902.	
	Sept. and Oct.	Sept. and Oct.	Entire Year.
Total provisions (except meat, fish, and eggs) . .	\$1.29	\$1.13	
Service . . . . .	.97*	.83	\$0.84
All other expenses (except meat, fish, and eggs) . .	.49	.79½	.76
Total general board (except meat, fish, and eggs) .	2.75*	2.75½	
Meat, fish, and eggs used	1.15	1.45	
Total regular board	3.90	4.20½	4.24½
Extras ordered . . . . .	.44	.34	.45
Total average board	\$4.34	\$4.54½	\$4.69½
* Special attention should be called to the fact that this includes increase of about ten cents per man per week to increase waiters' salaries in place of tips; includes pay of increased number of extra waiters; and includes increase in consumption of vegetables and cereals over last year's consumption.		Exclusive of tips.	

Under either the old or the new system, the share of general, nearly fixed expenses to be borne by each member is increased about thirteen (13) cents per man per week by each decrease of one hundred in membership.

MEMORIAL HALL.

MONDAY, NOVEMBER 16, 1903.

Coupons to be used only for meat, fish, and eggs, as listed on Menu Cards.

As the waiters' salaries have been raised to fair sums, and as taking tips is cause for immediate discharge, each member is earnestly asked not to offer tips.

BREAKFAST.

	Cents.		Cents.
Grape Fruit, half	7	Buckwheat Cakes and Maple Syrup	5
Pears (2)	5	Scrambled Eggs	6
Bananas (2)	5	Liver and Bacon	7
Apples.		Bacon	4
Oatmeal. Rolled Wheat. Force.		Baked Potatoes.	
Cream	3	Rolls. Muffins.	
Comb Honey	5	Tea. Coffee. Cocoa.	
Baked Apples	5	Hot Milk.	

LUNCH.

	Cents.		Cents.
Consommé Celery.		Comb Honey	5
Veal Cutlets, Breaded, Tomato		Orange Marmalade	5
Sauce	11	Preserved Damson.	
Cold Corned Beef	6	Cookies.	
Baked Potatoes. Samp.		Tea. Coffee. Cocoa.	
Hulled Corn	5	Hot Milk.	

DINNER.

	Cents.		Cents.
Mulligatawny.		Bluepoints on half-shell, half . . .	10
Lettuce	5	Fried Smelts, Tartar Sauce . . .	25
Celery	7	Broiled Spring Chicken, half . . .	30
Broiled Sirloin Steak	11	Fried Frogs' Legs	25
Roast Fresh Pork, Apple Sauce . .	10	Bananas (2)	5
French Fried and Mashed Potatoes.		Pears, each	3
Green Peas.		“ two	5
Boiled Rice.		Grapes, per order	5
Chocolate Ice-cream. Cake.		Frozen Pudding	5
Cheese. Crackers.		“ “	10
Tea. Coffee. Cocoa.		Camembert Cheese, Toasted Crack-	
Bluepoints on half-shell, dozen . .	20	ers, Black Coffee	15

SUMMER SCHOOL OF ARTS AND SCIENCES.

SUMMARY OF REGISTRATION.

BY SEX.

Sex.	1900.		1901.		1902.		1903.	
	Number of persons.	Percent. of each sex.	Number of persons.	Percent. of each sex.	Number of persons.	Percent. of each sex.	Number of persons.	Percent. of each sex.
Men	274	35	248	32	275	37	473	40
Women	510	65	519	68	462	63	713	60
Total	784		767		737		1,186	

BY DEPARTMENTS OF INSTRUCTION.

Department.	1900.	1901.	1902.	1903.
Sanskrit . . . . .	..	..	..	2
Greek	15	12	8	16
Latin	18	30	16	48
English	188	184	165	275
Speaking and Reading	6	14	11	31
German	24	15	19	40
French	26	11	13	23
Spanish	11	9	6	10
Russian . . . . .	..	..	..	2
History	44	61	38	81
Civil Government	12	11	4	4
Economics . . . . .	..	..	..	10
Psychology	32	31	15	31
Education	66	51	70	123
Theory of Design	66	70	80	88
Drawing . . . . .	..	..	5	12
Music . . . . .	..	13	5	13
Mathematics	43	53	70	121
Teaching of Mathematics	7	..	10	*
Astronomy	2	3	..	..
Surveying	4	4	7	24
Shopwork	2	10	6	12
Physics	32	36	44	55
Chemistry	35	16	15	36
Botany	25	27	30	31
Geology	32	12	16	36
Geography	42	21	38	40
Mineralogy	5	..	..	..
Physical Education	126	149	204	253
TOTAL REGISTRATIONS	863	843	890	1,419
DUPLICATES	79	76	153	233
TOTAL PERSONS	784	767	737	1,186

* Included in Education above.

TABLE I.
ILLNESS REPORT. PERCENTAGE OF SIGN-OFFS.

	College.					Scientific School.					Professional.		
	1 yr.	2 yr.	3 yr.	4 yr.	Sp.	1 yr.	2 yr.	3 yr.	4 yr.	Sp.	Law.	Grad.	Div.
1900-01	175	210	197	150	133	172	106	75	69	74	27	46	50
1901-02	153	137	132	98	103	123	136	125	74	75	20	28	25
1902-03	184	194	171	151	74	93	106	116	69	62	13	17	22

TABLE II.
ILLNESS REPORT, 1902-03.

Diseases.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Appendicitis	1	6	3	5	3	5	7	5	1	..	36
Bronchitis	1	12	18	18	17	17	20	7	3	1	114
Chicken-pox . . . . .	..	1	..	2	..	3	1	..	..	..	7
Colds — unclassified . .	7	109	142	103	79	147	148	98	52	..	885
Constipation . . . . .	..	2	3	1	1	1	6	3	1	..	18
Coryza . . . . .	..	8	8	18	4	16	13	9	6	..	82
Dentistry . . . . .	..	5	14	9	8	9	12	13	10	..	80
Diarrhoea	1	52	57	20	14	21	30	18	27	..	240
Diphtheria . . . . .	..	1	1	1	..	1	2	1	..	..	7
Ear, of the	2	7	6	5	4	10	3	2	6	..	45
Eye, of the	1	34	34	19	9	31	45	29	26	..	228
General Debility . . . .	..	7	7	7	8	7	12	12	7	3	70
Headache . . . . .	..	19	29	13	9	10	23	16	18	..	137
Indigestion	7	55	73	58	35	49	59	50	45	2	433
Insomnia	1	..	5	2	..	1	8	..	1	1	19
Jaundice	1	1	5	2	2	2	2	3	1	..	19
La Grippe . . . . .	..	8	5	11	55	198	105	28	12	..	422
Laryngitis	1	1	5	3	2	2	2	4	3	..	23
Malaria . . . . .	..	8	6	4	1	2	3	8	3	1	36
Measles . . . . .	..	..	..	..	1	..	2	4	..	..	7
Miscellaneous	4	56	69	39	54	56	56	31	25	..	390
Mumps . . . . .	..	..	..	..	4	2	3	..	2	1	12
Neuralgia . . . . .	..	8	4	9	5	8	4	12	6	..	56
Overwork	2	4	10	5	4	8	12	3	7	2	57
Pertussis . . . . .	..	..	..	1	1	..	..	..	..	..	2
Pharyngitis . . . . .	..	14	20	23	22	26	33	19	11	..	168
Pneumonia . . . . .	..	..	..	1	1	3	1	1	..	..	7
Rheumatism	1	4	5	6	10	3	3	6	2	1	41
Scarlet Fever . . . . .	..	1	2	..	..	..	2	2	..	..	7
Skin, of the	4	8	9	8	6	2	11	4	9	..	61
Surgical	9	91	69	29	26	27	57	32	36	1	377
Tonsillitis	1	14	15	28	23	30	52	19	16	3	201
Tuberculosis . . . . .	..	2	1	1	..	1	..	..	..	..	5
Typhoid . . . . .	..	5	1	..	..	..	..	..	..	..	6
Totals	44	543	626	451	408	698	737	439	336	16	4298

Visits 778

Office consultations 1887

Total number of consultations 2665

Calls on students not found in (not included in above) 342

Other cases not seen by the Medical Visitor 2031

TABLE III.

ILLNESS REPORT AS RELATED TO THE DIFFERENT SCHOOLS.

Diseases.	College.					Scientific.					Law.	Graduate.	Divinity.	Medical.	Totals.
	1	2	3	4	Sp.	1	2	3	4	Sp.					
Appendicitis . .	10	7	9	4	..	1	1	1	..	1	1	1	..	..	36
Bronchitis . . .	28	29	20	18	1	2	3	2	2	2	3	3	1	..	114
Chicken-pox . .	1	2	1	..	..	1	..	..	..	..	2	..	..	..	7
Colds, unclassified	234	233	149	121	13	35	40	23	19	14	1	..	2	1	885
Constipation . .	7	6	3	..	..	..	..	1	..	1	..	..	..	..	18
Coryza	22	20	17	11	2	5	1	4	..	..	..	..	..	..	82
Dentistry	27	20	16	8	1	1	4	1	2	..	..	..	..	..	80
Diarrhoea	67	69	46	29	3	9	11	4	..	2	..	..	..	..	240
Diphtheria	4	2	..	1	..	..	..	..	..	..	..	..	..	..	7
Ear, of the	15	8	9	3	..	1	..	1	2	2	3	1	..	..	45
Eye, of the	58	83	31	24	3	4	9	6	3	5	1	1	..	..	228
General Debility .	11	12	12	12	4	3	6	2	2	3	2	1	..	..	70
Headache	34	42	14	12	8	2	9	5	2	6	1	1	1	..	137
Indigestion . . .	126	121	65	51	9	14	15	8	3	3	13	4	1	..	433
Insomnia	4	5	4	3	..	1	1	..	..	..	1	..	..	..	19
Jaundice	4	..	3	5	..	1	4	2	..	..	..	..	..	..	19
La Grippe	111	87	66	65	7	14	17	9	9	12	13	8	2	2	422
Laryngitis	7	9	2	..	..	1	2	..	1	..	..	1	..	..	23
Malaria	9	7	6	6	2	..	2	..	2	..	..	2	..	..	36
Measles	4	..	1	..	1	..	..	..	..	..	1	..	..	..	7
Miscellaneous . .	93	107	57	66	16	7	13	6	3	4	11	7	..	..	390
Mumps	1	..	..	3	..	..	5	..	..	..	1	1	..	1	12
Neuralgia	18	16	7	7	2	..	1	..	..	3	1	1	..	..	56
Overwork	9	15	7	13	2	1	..	..	1	..	2	5	..	2	57
Pertussis . . . . .	..	..	..	..	..	..	..	..	..	2	..	..	..	..	2
Pharyngitis . . .	50	46	26	17	2	10	2	6	1	5	..	3	..	..	168
Pneumonia	1	..	2	..	..	..	1	..	..	..	1	2	..	..	7
Rheumatism . . .	11	8	10	2	1	1	2	1	1	..	2	2	..	..	41
Scarlet Fever . .	3	..	2	..	2	..	..	..	..	..	..	..	..	..	7
Skin, of the . . .	14	10	12	6	1	3	1	1	4	..	8	1	..	..	61
Surgical	100	88	74	59	7	7	6	7	6	6	10	6	..	1	377
Tonsillitis	32	65	48	26	3	3	4	6	2	3	5	3	1	..	201
Tuberculosis . . .	2	..	1	1	..	..	..	..	..	..	..	1	..	..	5
Typhoid . . . . .	..	3	1	2	..	..	..	..	..	..	..	..	..	..	6
Totals	1117	1120	721	575	90	127	160	96	65	74	83	55	8	7	4298
No. of Students..	608	578	420	381	122	136	151	83	94	120	640	301	37		
% of "Sign-offs"	184	194	171	151	74	93	106	116	69	62	13	17	22		

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TREASURER'S STATEMENT.

TO THE BOARD OF OVERSEERS OF HARVARD COLLEGE:—

The Treasurer of the College submits the Annual Statement of the financial affairs of the University, for the year ending July 31, 1903, in the usual form.

The Funds separately invested, with the income thereof, are as follows:—

UNIVERSITY.	Principal, July 31, 1903.	Income.
George B. Dorr, University Houses and Lands,	\$115,966.56	\$5,044.83
George Draper, University Houses and Lands,	48,458.50	679.43
John Cowdin, Real Estate, Haymarket Square, Boston,	22,000.00	1,699.82
John C. Gray, University Houses and Lands,	25,000.00	1,087.56
Walter Hastings, Real Estate, Sacramento St., Cambridge,	20,000.00	1,123.48
Insurance and Guaranty, University Houses and Lands,	87,885.23	5,754.86
Real Estate, Lucas St., Boston,	4,000.00	
Joseph Lee, University Houses and Lands,	10,000.00	435.02
Francis E. Parker, University Houses and Lands,	113,817.44	4,951.34
Mary R. Searle Fund, 10 shares American Express Co. (sold during year),		80.00
Henry Villard (part), University Houses and Lands,	18,209.31	
William F. Weld, University Houses and Lands,	100,000.00	4,350.24

COLLEGE.

T. Jefferson Coolidge, for Research in Physics, 625 shares Massachusetts Electric Companies, pref.,	57,500.00	2,500.00
Eaton Professorship of the Science of Government, Mortgages on real estate in New York City, . . .	84,000.00	700.00
Amounts carried forward,	\$706,837.04	\$28,406.58

Amounts brought forward,	\$706,837.04	\$28,406.58
as Eliot Norton Fellowship,		
1,000 Northern Pacific-Great Northern Joint 4's		
(C. B. & Q. collateral) of 1921,	14,100.00	600.00
e Foster Peabody Scholarship,		
1,000 Mexican Coal & Coke Co. 1st M., S. F. 5's		
of 1926,	4,800.00	150.00
yer Scholarships (part),		
nnoyer Annuity in England (sold during year),		21.22
han Phillips's Gift,		
1,000 City of Boston 3½'s of 1920,	10,000.00	350.00
orship of Hygiene (part),		
licy of Mass. Hospital Life Insurance Co., . .	5,000.00	200.00
1,000 Northern Pacific-Great Northern Joint 4's		
(C. B. & Q. collateral) of 1921,	15,681.85	640.00
ship of the Class of 1883,		
1,000 Brookline Gas Light Co. Gen'l M. 5's of 1913,	5,000.00	250.00
p Smith Scholarship,		
1,000 Metropolitan West Side Elevated R. R. Ex-		
ension M. 4's of 1938,	4,700.00	
hton Scholarship (part),		
al Estate in Dorchester,	1,294.30	
Professorship of Sanskrit,		
al Estate, Cornhill, Boston,	40,000.00	257.45
al Ward's Gift,		
ard's (Bumkin) Island, Boston Harbor, . . .	1.00	
Ames Wells (part),		
1,000 The Electric Corporation 7's of 1992 (sold		
during year),		35.00
al Estate in Brooklyn, New York,	2,500.00	
shares Walter A. Wood M. & R. Machine Co., .	550.00	
L. Whitney Scholarship,		
300 City of Laramie 10-30 6's (sold during year),		39.00
ecutor of C. L. B. Whitney's will, interest		
on a loan, which has not been transferred, . . .		27.00

LIBRARY.

od Tucker (part),		
licy of Mass. Hospital Life Insurance Co., . . .	5,000.00	200.00

LAW SCHOOL.

Barr Ames Prize (part),		
ersonal Note,	2,500.00	108.00

MEDICAL SCHOOL.

and Lucy Ellis (part),		
1,000 Northern Pacific-Great Northern Joint 4's		
(C. B. & Q. collateral) of 1921,	26,585.00	1,600.00
al Estate in Boston,	22,500.00	362.29
al Estate in Eden, Bar Harbor, Maine,	10,000.00	

Amounts carried forward, \$877,049.19 \$33,246.54

Amounts brought forward,	\$877,049.19	\$33,246.54
George C. Shattuck (part),		
\$25,000 Kansas City, Fort Scott & Memphis R. R.		
Cons. M. 6's of 1928 (\$203.70 deducted from income for sinking premium),	30,092.60	1,296.80

OBSERVATORY.

Advancement of Astronomical Science (1902) (part),		
15 shares Calumet & Hecla Mining Co.,	9,000.00	375.00
\$3,000 Mortgage Note,	3,000.00	180.00
5,000 Northern Pacific-Great Northern Joint 4's (C. B. & Q. collateral) of 1921,	4,800.00	200.00

PEABODY MUSEUM OF AMERICAN ARCHAEOLOGY
AND ETHNOLOGY.

Peabody Building (part),	} \$54,000 Kansas & Missouri R. R. 1st M. 5's of 1922,	11,512.72	622.32
Peabody Collection (part),		19,218.64	1,038.84
Peabody Professor (part),		19,218.64	1,038.84
Thaw (part) (\$8.48 deducted from income for sinking premium),			
\$20,000 Girard Point Storage Co. 1st M. 3½'s of 1940,		20,313.58	691.52

SPECIAL FUNDS.

Bussey Trust,		
Real Estate,	392,710.18	15,796.42
Robert Troup Paine (accumulating) (\$174.77 deducted from income for sinking premiums),		
\$38,000 Massachusetts 3½'s of 1913,	39,519.88	1,185.25
5,000 " " 1916,	5,271.10	154.15
3,000 " " 1938,	3,316.25	95.83
Fund of the Class of 1834,		
Policy of Mass. Hospital Life Insurance Co., . . .	1,000.00	40.00
Fund of the Class of 1844,		
Policy of Mass. Hospital Life Insurance Co., . . .	6,500.00	260.00
Fund of the Class of 1853,		
Policy of Mass. Hospital Life Insurance Co., . . .	3,725.00	149.00
Charles L. Hancock Bequest (part),		
Real Estate in Chelsea,	410.00	
Calvin and Lucy Ellis Aid (part),		
Real Estate in Boston,	22,500.00	362.28
Price Greenleaf. (\$915.53 deducted from income for sinking premiums.) The total amount of this Fund is \$788,865.31, which is invested as follows:—		
\$12,200 Rutland R. R. 6's of 1902 (paid during year),		284.68
3,000 Chicago, Burl. & Quincy R. R. 4's of 1922,	2,880.00	120.00
290 shares Northern R. R. (N. H.),	29,290.00	1,740.00
317 " Boston & Maine R. R.,	48,724.00	2,219.00
Amounts carried forward,	\$1,550,051.78	\$61,095.97

Amounts brought forward, \$1,550,051.78 \$61,095.97

Price Greenleaf (*continued*).

860 shares Boston & Lowell R. R.,	46,800.00	2,880.00
237 " Fitchburg R. R., preferred,	22,306.27	1,185.00
355 " Old Colony "	63,190.00	2,485.00
23 " N. Y. Central & Hudson River R. R., . .	2,635.00	115.00
52 " West End Street Railway, preferred, .	4,305.56	208.00
34 " Central Vermont R'y,	428.72	
707 " Pennsylvania R. R.,	51,856.04	1,800.00
15 " Boston Real Estate Trust,	20,703.75	675.00
100 " Paddock Building Trust,	10,000.00	150.00
\$70,000 American Bell Telephone Co. 4's of 1908;	70,644.75	2,671.05
70,000 Broadway Realty Co. Purchase money		
1st M. 5's of 1926,	74,328.90	3,315.78
24,000 Burl. & Mo. R. R. in Neb. non ex. 6's of		
1918,	24,616.69	1,088.86
43,500 Central Vermont R'y 1st M. 4's of 1920, .	37,845.00	1,740.00
50,000 Chic. Junc. R'ys & Union Stock Yards 5's of		
1915,	47,000.00	2,500.00
8,000 Kansas City, Fort Scott & Memphis cons.		
M. 6's of 1928,	9,784.32	149.75
50,000 Metropolitan Tel. & Tel. Co. 1st M. 5's of		
1918,	49,750.00	2,500.00
25,000 New England Tel. & Tel. Co. 6's of 1906, .	25,222.65	1,425.78
34,000 New York Central & Hudson River R. R.		
(Michigan Central Collateral) 3½'s of 1998,	28,412.10	1,190.00
32,000 Northern Pacific-Great Northern Joint 4's		
(C. B. & Q. collateral) of 1921,	19,993.55	1,280.00
7,500 Pennsylvania R. R. conv. 3½'s of 1912		
(converted during year),		196.87
50,000 Union Pacific R.R. 1st M. & L.G. 4's of 1947,	44,625.00	2,000.00
50,000 Note of Massachusetts Cotton Mills, . . .	50,000.00	2,218.75
Cash in City Trust Co.,	3,523.01	43.01
Totals,	\$2,258,023.09	\$92,913.82

The other Funds are invested as a whole. The general investments are stated in detail on pages 42, 43, 44, and 45 of this report. The usual summary of them, and of their income, is as follows :—

Investments.	Principal, Aug. 1, 1902.	Principal, July 31, 1903.	Income.
Notes, Mortgages, &c.,	\$728,000.00	\$1,659,000.00	\$55,348.42
United States Bonds,	462,249.39		7,742.00
Railroad Bonds,	4,445,544.36	5,270,059.35	209,061.92
Sundry Bonds,	1,753,980.52	1,623,406.48	74,593.71
Railroad Stocks,	377,899.91	617,550.17	18,376.00
Manufacturing and Telephone Stocks,	94,429.54	194,344.64	9,138.67
Real Estate Trust Stocks,	400,129.72	407,629.72	11,283.50
Amounts carried forward, . .	\$8,262,233.44	\$9,771,990.36	\$385,544.22

Investments.	Principal, Aug. 1, 1902.	Principal, July 31, 1903.	Interest.
Amounts brought forward, . .	\$8,262,233.44	\$9,771,990.36	\$385,544.22
Real Estate,	2,751,541.92	2,796,354.66	145,148.70
Advances to Bussey Trust,	29,785.51	59,068.11	1,293.31
" " Cowdin Real Estate, .		2,152.94	
" " Calvin & Lucy Ellis Real Estate,	63.37		3.17
" " Medical School Under- taking,	472,583.60	485,763.24	18,214.31
" " Observatory,	2,921.85	3,362.84	146.09
" " Sch. of Veterinary Med.,	14,114.90		705.75
" " Peabody Museum of Am. Archaeology and Ethnology,	2,278.60	3,123.51	113.93
" " Botanic Department, . .	5,307.35	6,897.98	265.37
" " Dining Hall Association,	46,224.69	44,339.16	2,087.12
" " Randall Hall " " " "	34,302.27	33,702.27	1,715.11
" " Classical Publication Fund of the Class of 1856,	963.91	615.72	48.20
" " Sundry Accounts,	129.15	1,391.26	
Baring Brothers & Company,	2,893.16		396.65
Term Bills due in October,	238,881.23	241,773.03	
" " overdue,	7,765.25	10,147.50	
Cash in Adams Trust Co.,		47,260.22	1,583.22
" City Trust Co.,		34.43	
" National Union Bank,	10,902.73	62,090.35	1,951.88
" Old Boston National Bank, .	96,114.57	13,322.86	2,693.38
" hands of Bursar,	16,975.62	21,508.17	
Totals of general investments, . .	\$11,995,983.12	\$13,605,498.61	\$561,910.41
Totals of special investments, . .	2,118,558.73	2,258,023.09	92,913.82
Amounts,	\$14,114,541.85	\$15,863,521.70	\$654,824.23

At the meeting of the Corporation, October 26, 1891, it was

"*Voted*, that the sum of \$23,341.97 being the net gain from sales of bonds at a profit, heretofore credited to the account of Railroad Bond Premiums, be transferred as of July 31, 1891, to a new account to be called 'Gains and Losses for General Investments,' which account shall be credited with all gains and charged with all losses hereafter arising from sales of property belonging to the general investments. As this account belongs pro rata to all the Funds sharing in general investments it is not to be allowed interest when its balance is on the credit side nor to be charged with interest when its balance is on the debit side."

The gains arising from the sale during the year of United States Bonds amounting to \$85,662.61, and from the

sale of certain railroad bonds, amounting to \$10,039.50, were credited to "Gains and Losses for General Investments" in accordance with the terms of the vote of October 26, 1891. The balance to the credit of that account August 1, 1903, was \$584,450.18.

The sums of \$9,935.55 and \$1,302.48 have been deducted from the income of all bonds bought at a premium and held respectively as general and special investments, and have been applied, as the fair yearly repayment from income, towards sinking the whole of these premiums at the maturity of the bonds.

The net income of the general investments has been divided at the rate of $4\frac{88}{100}$ per cent. among the Funds to which they belong (excluding "Gains and Losses for General Investments"), after allowing special rates to certain temporary Funds and balances. The fraction, which was \$214.41, has been placed as usual to the credit of the University account.

The rate of income compared with that for 1901-02 shows a decrease of twelve one-hundredths of one per cent.

The following table shows the income available for the departments dependent upon the College proper, and the expenditures in those departments; the income and the expenditure for the Lawrence Scientific School and the College being combined in the College account:—

Interest on Funds for

University Salaries and Expenses,	\$51,564.30
Library Salaries and Expenses (not books), . . .	28,810.90
College Salaries and Expenses,	85,334.64
Gymnasium, and repairs on College buildings, . .	none.

Receipts from students, 595,369.75

Sundry receipts, as follows:—

Gifts for Salaries and Expenses,	\$3,610.00		
Use of buildings (not University Houses			
and Lands),	4,120.00		
Sales of catalogues, pamphlets, &c., . .	4,667.97		
Sundry receipts and repayments,	216.09	12,614.06	\$773,693.65

Expended for

University Salaries and Expenses,	\$101,057.78
Library Salaries and Expenses (not books),	46,377.39
College Expenses,	139,182.25
College Salaries,	433,410.33

Amount carried forward, \$720,027.75

Amount brought forward,	\$720,027.75	
Gymnasium Expenses,	9,734.84	
Expenses on College Public buildings, which are not valued in the Treasurer's books,	42,023.61	
Expenses on College Dormitories, which are not valued in the Treasurer's books,	26,748.92	
Scholarships, paid by the University,	3,000.00	
Exhibitions and loans, paid by the University,	1,400.00	
Expenses on account of the School of Veterinary Medi- cine,	1,046.70	
Debt of the School of Veterinary Medicine, paid from University Funds,	10,114.90	\$814,096.73
Balance, showing the deficit for the year, which has been charged to the Insurance and Guaranty Fund,		\$40,403.07

The following table shows the results for the years 1902-03 and 1901-02 in the several Departments of the University.

Departments.	1902-03.		1901-02.	
	Surplus.	Deficit.	Surplus.	Deficit.
University, College, Lawrence Scientific School, and Library,	\$40,403.07	\$12,138.77		
Divinity School,	14,526.93	9,035.76		
Law School,	\$31,522.18	41,959.67		
Medical School,	13,868.73	\$4,355.62		
Dental School,	2,124.80	5,345.53		
Bussey Institution,	918.37	348.82		
Museum of Comparative Zoölogy, . . .	5,336.38	2,625.43		
Observatory,	440.99	5,714.65		
Peabody Museum of American Arch- æology and Ethnology,	844.91	671.30		
School of Veterinary Medicine,	1,046.70	1,847.66		

Gifts have been received during the year as follows:—

GIFTS TO FORM NEW FUNDS OR TO INCREASE OLD ONES.

From the estate of Henry L. Pierce, \$45,000 additional, on account of his unrestricted residuary bequest.

From the estate of Robert Henry Eddy, \$287 additional, on account of his unrestricted residuary bequest.

From the estate of Mrs. Mary R. Searle, securities valued at \$1,928.75, her unrestricted bequest in memory of her son, Eugene N. Aston, of the Class of 1874.

From the anonymous founder of the Professorship of Hygiene, \$13,000 in cash, and securities valued at \$7,968.66, to be added to the fund of that professorship.

From Mr. and Mrs. Nelson Robinson, \$200,000, to be added to the Nelson Robinson Jr. Fund, which was established by them.

From the estate of David Ames Wells, \$3,990.15 in cash, and real estate valued at \$2,500, additional, on account of his residuary bequest for establishing a prize and publication fund.

From the estate of Henry W. Wales, his bequest of \$40,000, the income thereof to be used "for the support of a Professor of the Sanskrit Language, and in the purchase of Books or Manuscripts in that department."

For the establishment of a Fund in memory of the late Edwin L. Godkin, the income thereof to be used in providing for the delivery and publication of lectures upon "The Essentials of Free Government and the Duties of the Citizen," or upon some part of that subject, such lectures to be called "The Godkin Lectures," \$12,050, from

Charles Francis Adams.
Alexander Agassiz.
Charles Bonaparte.
James Bryce.
George Burnham, Jr.
John L. Cadwalader.
Andrew Carnegie.
J. Bonham Carter.
James C. Carter.
Joseph H. Choate.
Clemence H. Crafts.
J. M. Crafts.
R. J. Cross.
W. Bayard Cutting.
Samuel B. Dana.
W. E. and the late Mrs. Sara
Sedgwick Darwin.
Miss Louise Dawson.
Eugene Delano.
A. V. Dicey.
W. E. Dodge.
Charles W. Eliot.
Frederic B. Elliott.
Theo. W. Ely.
Charles S. Fairchild.
Frederick de P. Foster.
Austen G. Fox.
Wendell P. Garrison.
Richard Watson Gilder.

Mrs. D. C. Gilman.
Miss Alice Gilman.
Geo. M. Gould.
John C. Gray.
John Clinton Gray.
Augustus Hemenway.
James J. Higginson.
Henry Holt.
Miss Gertrude L. Hoyt.
W. R. Huntington.
Henry James.
William James.
Henry La Barre Jayne.
Alfred R. Kimball.
Mrs. H. Kuhn.
Joseph Larocque.
John Howard Latham.
Henry C. Lea.
Lewis Cass Ledyard.
James Lowndes.
Misses Lyon.
Charles McBurney.
Charles F. McKim.
Mr. and Mrs. Charles MacVeagh.
Wayne MacVeagh.
Mrs. John Markoe.
Charles H. Marshall.
Cord Meyer.
S. Weir Mitchell.

J. Pierpont Morgan.
 John W. T. Nichols.
 Charles E. Norton.
 A. D. Noyes.
 Leonard E. Opdycke.
 Wm. J. Palmer.
 J. Rodman Paul.
 George Foster Peabody.
 Albert Pell.
 Mrs. Alfred Pell.
 Wm. M. Polk.
 Henry C. Potter.
 George Putnam.
 F. W. Rhinelanders.
 James F. Rhodes.
 Mrs. Wm. B. Rice.
 J. G. Rosengarten.
 Mrs. Abraham B. Sands.
 Henry M. Sands.
 Georgina Schuyler.
 Louisa Lee Schuyler.

Mr. and Mrs. Philip Schuyler.
 A. G. Sedgwick.
 Frederick Sheldon.
 Francis Lynde Stetson.
 Anson Phelps Stokes.
 Moorfield Storey.
 F. K. Sturgis.
 Mr. and Mrs. J. Kennedy Todd.
 Mr. and Mrs. Merritt Trimble.
 Mrs. and Miss Tuckerman.
 Harold G. Villard.
 Mrs. Henry Villard.
 Oswald Garrison Villard.
 Samuel G. Ward.
 Sidney Webster.
 Horace White.
 Mrs. Henry Whitman.
 William C. Whitney.
 F. W. Whitridge.
 Stuart Wood.
 Sarah C. Woolsey.

From the estate of Robert Charles Billings, \$65,000, awarded by the surviving executors of Mr. Billings's will for the following purposes: \$50,000 to be called the Robert Charles Billings Fund, the income only to be used for the care of poor sick students under treatment at the Stillman Infirmary; and \$15,000 to be called the Robert Charles Billings Fund for the Gray Herbarium, the income only to be used for the purposes of the said Gray Herbarium.

From the estate of Dorman B. Eaton, \$16,553.18 in cash, and securities valued at \$84,000, in full payment of Mr. Eaton's bequest of \$100,000 for establishing a professorship of the Science of Government, with accrued income thereon.

From the estate of George W. Dillaway, \$5,000, his bequest for the support of a "fellowship of one year's duration in favor of the graduate from year to year who passes his examination with highest honor in Modern History."

From William Watson Goodwin, \$500, to be added to the fund of \$7,000 previously given by him for the endowment of the Charles Haven Goodwin Scholarship.

From George Foster Peabody, securities valued at \$4,800, for establishing in connection with the graduation of his nephew, Charles Samuel Peabody, of the Class of 1902, a scholarship in the Graduate School, "the scholar to be nominated by the

Chancellor of the University of Georgia from among the recent graduates of that institution."

From Mrs. John Markoe, \$5,000, for establishing the Markoe Scholarship in Harvard College.

From the estate of Mrs. Frederic L. Ames, \$50,000, the income thereof to be "expended for the maintenance and support of any of the poor and meritorious students in said College."

From the Harvard Club of Chicago, securities valued at \$4,700, for establishing the Dunlap Smith Scholarship, the income thereof to be given to some meritorious student in the undergraduate department of Harvard College, or the Lawrence Scientific School.

From the estate of Charles L. B. Whitney, securities valued at \$7,798.63, on account of his bequest for the purpose of founding the Mary L. Whitney Scholarship for the benefit of "some needy member of the Freshman Class."

From Mrs. David P. Kimball, \$25,000, for establishing the Bertram Kimball Fund, "to be used for aiding poor students of either sex studying under the direction of the Faculty of Arts and Sciences."

From Charles J. Hughes, Jr., \$500, to be used as a Loan Fund for the benefit of students in the Law School.

For the Medical School Undertaking (in addition to gifts, amounting to \$162,250, which are separately entered among "Gifts for Immediate Use"), as follows:—

From John D. Rockefeller, \$527,450.70 additional, on account of his offer of \$1,000,000 for new buildings and endowments.

From the estate of Robert Charles Billings, \$7,500, the final payment on account of his unrestricted residuary bequest, which has been applied by the Corporation to the Medical School Undertaking.

From Frederick C. Shattuck, \$12,500, the final payment on account of his offer of \$25,000, to be added to the endowment of the Shattuck Professorship of Pathological Anatomy.

From Mrs. Frederick C. Shattuck, \$12,500, the final payment on account of her offer of \$25,000, to be added to the endowment of the Jackson Professorship of Clinical Medicine.

From George F. Fabyan, \$25,000, to be added to his gift of \$100,000 for the endowment of the George Fabyan Professorship of Comparative Pathology.

From James Stillman, \$100,000, for the endowment of the James Stillman Professorship of Comparative Anatomy.

From the estate of Miss Ellen Osborne Proctor, \$50,000, her bequest for establishing the "Proctor Fund for the Study of Chronic Diseases."

From Mrs. Arthur W. Blake, \$500, to be added to the F. B. Greenough Fund for Surgical Research.

From the estate of Robert Treat Paine, \$374.21 additional, on account of his residuary bequest for the Observatory.

For the Arnold Arboretum Fund, from

Caleb Chase	\$100	Amount brought forward . .	\$1,775
Henry P. Curtis	10	Francis Shaw	100
A. F. Estabrook	1,000	A. Shuman	100
Harold C. Ernst	20	Francis Skinner	2,000
Robert H. Gardiner	25	H. M. Whitney	2,500
B. F. Keith	120		<u>\$6,475</u>
Massachusetts Society for Pro-			
moting Agriculture	500		
Amount carried forward . .	\$1,775		

From Miss Agathe Schurz and Miss Marianne Schurz, \$3,000, for establishing, as of March 5, 1903, in memory of their brother, the Herbert Schurz Memorial Free Bed Fund, the income thereof to be used for defraying the expenses of needy students at the Stillman Infirmary.

The total amount of these gifts for capital account is \$1,340,876.28, as is also stated on page 34 of this report.

GIFTS FOR IMMEDIATE USE.

From James Ford Rhodes, \$1,000, for instruction in the Department of History.

From James H. Hyde, \$24.08, for the French Department Library.

From F. C. de Sumichrast, \$27.40, for making lantern slides for use in the Department of French.

From an anonymous giver, \$50, for certain printing for Botany 1.

For the Botanic Garden, from

Anonymous	\$250
Anonymous	<u>1,000</u>
	\$1,250

Through Charles R. Lanman, twelve gifts amounting to \$800, for a Travelling Fellowship in Indic Philology for 1902-03 and 1903-04.

Through W. L. Putnam, \$200, for continuing the subscription to the Transactions of the American Mathematical Society for the further term of two years.

For the Gray Herbarium, from

R. L. Agassiz	\$10	Amount brought forward . .	\$4,670
J. B. Ames	10	Mrs. Lewis S. Dixon	10
Anonymous	3,000	Edward S. Dodge	25
Anonymous	750	Mrs. Samuel Eliot	10
Anonymous	500	Mrs. J. W. Elliot	10
Anonymous	50	William Endicott	25
Anonymous	25	William Endicott, Jr.	50
Anonymous	10	Charles F. Fairbanks	10
Howard P. Arnold	25	Mrs. W. Scott Fitz	10
Miss Mary F. Bartlett	25	S. W. Fletcher	10
Walter C. Baylies	10	Miss Amy Folsom	10
Mrs. Arthur W. Blake	10	Mrs. W. H. Forbes	10
William P. Blake	10	Francis C. Foster	10
Miss M. E. Blatchford	10	Mrs. Francis C. Foster	10
Charles P. Bowditch	10	Miss C. A. French	10
James C. Braman	5	Charles W. Galloupe	5
Mrs. J. L. Bremer	10	Robert H. Gardiner	10
William Brewster	10	George A. Goddard	10
Addison Brown	10	Miss A. M. Goodwin	10
Stephen Bullard	10	Francis C. Gray	10
E. S. C.	20	Mrs. F. T. Gray	10
H. D. Chapin	10	Mrs. H. S. Grew	10
Charles F. Choate	10	George W. Hammond	10
Miss Cora H. Clarke	10	Mrs. George W. Hammond . .	10
Miss Helen Collamore	10	E. B. Haskell	10
Mrs. C. A. Cummings	10	Augustus Hemenway	10
Charles P. Curtis	10	Mrs. Augustus Hemenway . .	10
Henry P. Curtis	10	Miss Clara Hemenway	10
Louis Curtis	10	Miss Annie P. Henschman . .	10
Miss Elizabeth E. Dana	10	J. P. B. Henshaw	10
Samuel B. Dana	10	T. W. Higginson	5
Nathan H. Daniels	10	Robert C. Hooper	10
Frank A. Day	25	Mrs. R. C. Hooper	10
Walter Deane	<u>15</u>	Miss Katharine Horsford . . .	<u>25</u>
Amount carried forward . .	\$4,670	Amount carried forward . .	\$5,075

Amount brought forward . . .	\$5,075	Amount brought forward . . .	\$6,280
3. Houghton	10	George Putnam	10
Howe	10	Edward L. Rand	10
unnewell	10	Miss Sarah E. Read	10
nnewell	10	Mrs. William Howell Reed . . .	10
.	10	George E. Richards	10
V. Jenks	10	Denman W. Ross	5
tenney	10	Mrs. M. D. Ross	10
L. Johnson	10	Mrs. Waldo O. Ross	10
Kimball	10	J. E. Rothwell	10
P. Kimball	10	Mrs. R. S. Russell	10
Kimball	10	Timothy F. Sawyer	10
Kimball, Jr.	10	George O. Sears	10
Kimball	10	Mrs. K. W. Sears	10
Lee	10	Mrs. P. H. Sears	10
son	50	Francis Shaw	10
Leverett	25	Mrs. G. H. Shaw	20
erge Linder	10	Mrs. Quincy A. Shaw	50
y E. Lodge	15	David N. Skillings	10
P. Loring	10	F. P. Sprague	10
sa P. Loring	10	I. Homer Sweetser	10
L. Loring	10	S. Lothrop Thorndike	10
iam C. Loring	10	Miss Cornelia Warren	10
Lyman	10	S. D. Warren	10
Mason	10	B. M. Watson	10
A. Munroe	10	Frank G. Webster	10
H. Norcross	10	Mrs. Frank G. Webster	10
Norcross	10	Mrs. Charles W. Welch	10
en	10	Conrad Wesselhoeft	5
y L. Osgood	10	Mrs. C. T. White	10
rietta Page	5	George R. White	750
Parkman	10	S. B. Whiting	10
Peabody	10	George Wigglesworth	10
body	750	Miss Adelia C. Williams	10
l. Peabody	10	John D. Williams	10
Phillips	10	Ralph B. Williams	100
kering	10	Samuel H. Winkley	10
y Pickering	10	Mrs. Roger Wolcott	10
gree	15	Edward S. Wood	10
tt	10	Mrs. Charlotte F. Woodman . .	10
Prendergast	10	Miss Mary Woodman	10
abeth C. Putnam	5	John G. Wright	10
carried forward . . .	\$6,280		\$7,560

A. L. Cross, \$39.52, towards the cost of printing of Harvard Historical Studies.

James J. Storrow, \$3,000, for electrical apparatus Department of Engineering.

Mrs. Charles H. Eaton, \$100, to be expended under action of Assistant Professor Sabine.

For a course of six lectures in Philosophy, from

James M. Barnard	\$100
Mary Putnam Jacobi	100
William James	175
A. Marquand	25
John T. Morse, Jr.	150
Edward C. Pickering	50
	<u>\$600</u>

For the building of Emerson Hall, from

Edwin H. Abbot	\$500	Amount brought forward . .	\$58,631
Anon.	2	George B. Dorr	1,000
Anonymous	50,000	Miss Julia M. Dutton	25
Anonymous	1	"E"	50
Francis R. Appleton	25	Mr. and Mrs. Charles W. Eliot .	200
Chester H. Arnold	5	Emersonians of Englewood, N.J.	10
Frederick F. Ayer	100	"Euphorion"	50
"B"	10	Mrs. Glendower Evans	25
Mrs. C. E. Bacon	10	Mrs. James T. Fields	25
Mr. and Mrs. J. M. Barnard .	500	Henry Wilder Foote	50
William S. Bigelow	1,000	Mrs. W. H. Forbes	10,000
Miss Elizabeth Bradford . . .	25	J. Geddes, Jr.	2
Lawrence G. Brooks	2	Albert Gehring	200
Francis Bullard	500	Miss Amelia M. Goodwin . . .	50
Stephen Bullard	200	Mr. and Mrs. W. W. Goodwin .	100
Mrs. William S. Bullard . . .	300	George A. Gordon	50
J. Eliot Cabot	2,500	Francis C. Gray	100
Mrs. Louis Cabot	500	Ira E. Gray	100
Richard B. Carter	5	George Walton Green	10
John J. Chapman	200	C. E. Guild, Jr.	15
Mr. and Mrs. H. Lincoln Chase	5	Mrs. George S. Hale	15
Stephen Chase	10	Edward Harding	5
J. H. Clark	100	W. T. Harris	100
Class of '67, member of . . .	250	Mrs. Jacob H. Hecht	100
Mrs. Mary N. Colvin and } . .	25	F. H. and C. A. Hedge	50
Mrs. Delafield		Mrs. Charles R. Hemenway . .	200
Mrs. A. Coolidge	10	Henry L. Higginson	250
Miss Grace G. Cowing	10	Thomas Wentworth Higginson .	5
Joshua Crane	10	Mr. and Mrs. A. S. Hill . . .	100
John Crosby	10	Charles F. Hinkle	10
Mr. and Mrs. C. A. Cummings	250	Ethel Whitney Holbrook . . .	25
Charles P. Curtis	500	Henry Holt	100
Mrs. G. S. Curtis	15	H. H. Horne	10
S. Newton Cutler	25	Joseph Howland Hunt	25
R. H. Dana	1,000	"In Memoriam"	25
Thomas Dawes	20	Miss Marian C. Jackson . . .	10
Smith O. Dexter	1	William James	5
Miss Louise Diman	5	Miss Elizabeth C. Jenkins . .	5
Amount carried forward . .	58,631	Amount carried forward . .	\$71,788

brought forward .	\$71,733	Amount brought forward	\$109,485
Keith	5	J. H. Rhoades, Jr.	10
nnedy	20	R. C. Robbins	1,000
ah Parker Kimball . .	50	S. W. Rodman	20
ane	5	James H. Ropes	5
Lawrence	25	William Ladd Ropes	5
phine Lazarus	25	Selwyn A. Russell	10
y Lee	10,000	C. W. S.	20
e	10,000	Edward T. Sanford	10
. Loeser	200	Mrs. F. B. Sawin	1
hen Loines	25	Miss Annie L. Sears	25
sa P. Loring	150	Miss Mary P. Sears	25
f Emerson"	2	Miss Emily Sever	25
ard Lowell	10	Mrs. G. H. Shaw	250
giana Lowell	10	Mrs. Quincy A. Shaw . . .	1,000
owell	100	Miss Olive Simes	15
ur Lyman	10	Mr. and Mrs. William Simes	100
Lyman	5,000	Miss Elizabeth R. Simmons .	25
man	50	L. Sprague	5
yons	5	Mrs. C. W. Stone	5
rant McCurdy	5	Miss Elsa W. Stone	5
l McFayden	5	James J. Storrow	250
y P. Mason	10,000	Miss Anna S. Tapley	50
rs. Daniel Merriman .	100	Willis Tew	25
ices R. Morse	25	Mrs. Bayard Thayer	500
uel T. Morse	200	James Bradley Thayer . . .	100
nsterberg	100	Mrs. James B. Thayer . . .	100
H. Norcross	250	Washington B. Thomas . .	1,000
Norton	10	A. A. Vaughan	15
.	10	"W"	5
reat Paine	100	Mrs. Oliver F. Wadsworth .	10
Palmer	5	Samuel G. Ward	1,000
. Palmer	100	Henry B. Washburn	2
. Francis G. Peabody .	100	George F. Weld	5
erkins	25	Miss Susan J. Wentworth .	100
1 C. Phillips	100	W. A. White	100
agree	500	George Wigglesworth . . .	100
ter	25	Miss Ann Bent Winsor . . .	10
utnam	250	Herbert H. Yeames	2
rge Putnam	100		
Putnam	25		\$115,420
ed	25	Interest on deposit	175.75
t carried forward .	\$109,485		\$115,595.75

1 George Foster Peabody, \$5,000, "for plantation of within the fence and about the buildings of the College

This gift was made in connection with the graduation Peabody's nephew, Charles Samuel Peabody, of the f 1902.

From Arthur T. Lyman, \$500, for making extra charts and maps for the Department of Economics.

From an anonymous giver, \$2,500, to be expended under the direction of Professor Peabody for the Department of the Ethics of the Social Questions.

For the Bermuda Biological Station for Research, from

Harris Kennedy	\$50
Theodore Lyman	300
Nathaniel C. Nash	150
John E. Thayer	500
	<u>\$1,000</u>

For research work in Experimental Phonetics, from

Alfred Bowditch	\$10	Amount brought forward . . .	\$75
C. P. Bowditch	10	Elliot C. Lee	10
Francis Blake	10	Francis C. Lowell	5
S. Eliot Guild	5	John T. Morse	10
Augustus Hemenway	10	Francis Shaw	10
F. L. Higginson	10	James J. Storrow	10
H. L. Higginson	10	A. C. White	5
G. M. Lane	10		<u>\$125</u>
Amount carried forward	<u>\$75</u>		

For the South End House Fellowship, from

E. W. Grew	\$25
Randolph C. Grew	100
Arthur T. Lyman	25
Herbert Lyman	20
Reginald C. Robbins	50
	<u>\$220</u>

From Mrs. C. M. Barnard, \$600, her twentieth yearly gift for the Warren H. Cudworth Scholarships.

From an anonymous giver, \$350, for the Ricardo Prize Scholarship for 1903-04.

From an anonymous giver, \$100, to be used in the same way as the income of scholarship funds is used.

From the Dante Society, \$100, for a Dante Prize; and \$150, for the purchase of books for the Dante collection in the College Library.

From Alain C. White, \$250, for the purchase of books for the Dante collection in the College Library.

From Archibald Cary Coolidge, \$1,250, for the purchase of books for the College Library.

From Harold J. Coolidge, \$50, his third annual gift for the purchase of books on the Chinese question, for the College Library.

For the purchase of early editions of the printed Bible, from

James Barr Ames	\$25	Amount brought forward . .	\$160
Henry W. Cunningham	10	Albert Matthews	20
George Dexter	25	Mrs. F. L. W. Richardson . .	25
J. H. Gardiner	20	Mrs. Charles F. Sprague . .	100
Edwin Ginn	25	Charles Thorndike	25
George Lyman Kittredge	5	George Francis Weld	5
Robert M. Lawrence	5	Alain C. White	25
William Lawrence	25	George Wigglesworth	25
Francis C. Lowell	20	The Department of English . .	8.81
Amount carried forward	\$160		\$398.81

For the purchase of books in English literature of the seventeenth and eighteenth centuries for the College Library, additional, from

Francis R. Appleton	\$250
George Baty Blake	25
W. Kirkpatrick Brice	25
W. Amory Gardner	100
A. A. Sprague	25
Ralph B. Williams	10
	<u>\$435</u>

From John Drew, \$1,000, for the purchase of a collection of books on the history of the stage, formerly belonging to Robert W. Lowe, dramatic critic and bibliographer.

From Mrs. Louis Bettmann, in memory of her son, Milton Bettmann, of the Class of 1897, \$300, for the purchase of books for the College Library.

From Ernest L. Gay, \$28.80, for the purchase of books for the College Library.

For repairs in the chapel of Divinity Hall, from

Church of the Saviour, Brooklyn	\$500
Daniel Merriman	25
	<u>\$525</u>

From the Lawrence Scientific School Association, \$300, for scholarships for 1902-03 and for the Summer School of 1903, for students in the Lawrence Scientific School.

From the Society for Promoting Theological Education, \$749.96, for the Library of the Divinity School.

Through Robert T. Jackson, \$34.48, to defray the cost of certain work done in the Palaeozoic room at the Museum of Comparative Zoölogy.

For the construction of an aquarium in the basement of the Museum of Comparative Zoölogy, from

Oliver Ames	\$100
Arthur Astor Carey	1,000
David W. Cheever	10
John C. Phillips	300
John E. Thayer	250
A. G. Weeks, Jr.	50
	<u>\$1,710</u>
Accrued interest	4.36
	<u>\$1,714.36</u>

For the Peabody Museum of American Archaeology and Ethnology, from

Anonymous	\$100
Mrs. N. E. Baylies	25
Clarence B. Moore	500
	<u>\$625</u>

From Roland B. Dixon, \$9, for binding a series of volumes in the Peabody Museum of American Archaeology and Ethnology.

From James J. Putnam and Moorfield Storey, trustees, \$500, towards a salary in the Medical School.

From an anonymous giver, \$500, to be used in the Department of Pathology in the Medical School for the expenses of an investigation of small-pox.

From Henry F. Sears, \$1,200, to be added to his previous gifts for the Pathological Department Library.

For the Surgical Laboratory, from

C. W. Amory	\$200
W. S. Bigelow	200
Edward S. Grew	50
Henry C. Pierce	200
	<u>\$650</u>

From Mrs. Arthur W. Blake, \$300, to be added to the income of the F. B. Greenough Fund for Surgical Research.

From Miss Katherine E. Bullard and William N. Bullard, \$500 each, to be used under the direction of the Shattuck Professor of Pathological Anatomy, with the approval of the President and Fellows, for the purpose of advancing the knowledge of the pathology of the nervous system.

Through Thomas Dwight, \$900, for defraying expenses connected with original investigation in the Department of Anatomy.

For the Medical School Undertaking (in addition to gifts, amounting to \$734,950.70, which are separately entered among "Gifts to form New Funds or to increase Old Ones"), as follows:—

From David Sears, \$100,000, towards the cost of one of the buildings.

For "Land, Buildings, Equipment, and Endowments," from

C. W. Amory	\$10,000
John Lewis Bremer	10,000
David P. Kimball	5,000
Joseph Lee	5,000
Ogden Mills	5,000
Nathaniel Thayer	25,000
Miss Mary Lee Ware	2,000
Charles Wyman	250
	<u>\$62,250</u>

From Mrs. Henry Draper, of New York, an additional sum of \$9,999.96, to be expended by the Director of the Observatory in prosecuting the researches in the photography of stellar spectra, with which the late Dr. Henry Draper's name is honorably associated.

From an anonymous giver, \$500, for present use at the Observatory.

From an anonymous giver, \$200, to be added to the income of the Fund for the Advancement of Astronomical Science (1902).

For publishing lunar photographs, from

E. C. Pickering	\$500
W. H. Pickering	100
N. S. Shaler	100
	<u>\$700</u>

From the Massachusetts Society for Promoting Agriculture, \$1,375, "to be expended at the Arnold Arboretum by the Director, to increase the knowledge of Trees."

From Miss Abby A. Bradley, \$600, to be added to the income of the William L. Bradley Fund for 1902-03.

From Evans, Almirall & Co., \$750, towards the cost of the license for the Evans system of hot-water heating installed in Pierce Hall.

From Mr. and Mrs. Nelson Robinson, \$5,000 additional, for the equipment of Nelson Robinson Jr. Hall.

From James Stillman, \$50,000, for the erection of a contagious ward in connection with the Stillman Infirmary, which was also his gift.

From Friends of the Department of Geology, \$475, for Scholarships in the Harvard College Colorado Summer Course in Geology.

From the Committee on the Regulation of Athletic Sports, \$20,000, to be added to its previous gifts for improvements upon, and additions to, The Soldier's Field, to be made by said Committee, with the approval of the Corporation.

From H. G. Curtis, \$85, for a case for the medals which he gave to the College.

From William Amory Gardner, \$10,000, towards the cost of a new University Library Building.

The total amount of these gifts for immediate use is \$415,542.12, as is also stated on page 32 of this report.

CHARLES F. ADAMS, 2D, *Treasurer.*

Boston, October 27, 1903.

ACCOUNTS

*General Statement of Receipts and Disbursements
for the year ending*

INCOME.

Interest on notes, mortgages, advances, &c.,	\$83,571.18	
Interest on Policies Mass. Hospital Life Insurance Co.,	849.00	
Interest on Bank Deposits.		
Deposit in Adams Trust Co.,	\$1,583.22	
" City Trust Co.,	43.01	
" National Union Bank,	1,951.88	
" Old Boston National Bank,	2,693.38	6,271.49
Interest on Public Funds (after deducting \$174.77 for sinking premiums).		
United States 4's,	\$7,742.00	
Massachusetts 3½'s of 1913,	1,185.25	
" " " 1916,	154.15	
" " " 1938,	95.83	
City of Boston 3½'s,	350.00	
City of Laramie 6's,	89.00	9,566.23
Interest on Railroad Bonds (after deducting \$8,093.35 for sinking premiums).		
Baltimore & Ohio 4's,	\$4,000.00	
" " (P. L. E. & W. V. system) Ref. 4's,	4,000.00	
" " conv. 4's,	1,875.00	
" " So. Western 3½'s,	3,500.00	
Bangor & Aroostook Ref. 4's,	5,000.00	
Burlington & Mo. River in Neb. 6's,	15,719.95	
Central Vermont 4's,	1,740.00	
Chicago & Alton 4's,	2,555.56	
Chicago, Burlington & Quincy 4's,	120.00	
" " " 3½'s,	15,244.44	
Chicago & No. Western Gen. M. 4's,	774.90	
" " Madison Extension 7's,	5,310.09	
Chicago, Rock Island & Pacific 4's,	3,920.90	
Chicago Terminal Transfer 4's,	4,000.00	
Eastern 6's,	12,117.72	
Eastern sterling 6's,	5,736.67	
Fort Scott, So. E. & Memphis 7's,	3,885.00	
Indiana, Illinois & Iowa 4's,	4,000.00	
Kansas City, Fort Scott & Memphis 6's,	7,380.38	
Kansas City, Memphis & Birmingham Income 5's,	1,192.35	
Kansas & Missouri 5's,	2,700.00	
Long Island 4's,	12,000.00	
Louisville & Jeffersonville Bridge 4's,	1,822.22	
Massachusetts Electric Co's. 4½'s,	4,500.00	
Metropolitan West Side Elevated 4's,	4,000.00	
" " " Extension 4's,	3,811.11	
Minneapolis Union 5's,	4,866.83	
Amounts carried forward,		\$135,773.12 \$100,257.90

*of the Treasurer of Harvard College,
July 31, 1903.*

EXPENSES.

aid to account of expenses in the

University, as per Table I (page 61).

Salaries,	\$40,960.43	
Retiring Allowances,	14,994.28	
Sundry payments made from special Funds and gifts,	19,389.25	
Other expenses,	55,596.59	
Expenses of the School of Veterinary Medicine for 1902-03,	1,046.70	
Debt of the School of Veterinary Medicine,	10,114.90	\$142,102.15

College, as per Table II (page 66).

Salaries for instruction,	\$417,227.00	
Sundry salaries,	16,183.33	
Expenses on College Public Buildings which are not valued in the Treasurer's books and which are not separately entered in this table,	42,023.61	
Expenses on College Dormitories, which are not valued in the Treasurer's books,	26,748.92	
General expenses,	74,147.75	
Fellowships,	18,975.00	
Scholarships,	47,499.97	
Exhibitions and expenses therefor,	25,448.40	
Prizes,	1,989.25	
Botanic Garden and Botanic Museum,	8,778.38	
Gray Herbarium,	11,936.36	
Hemenway Gymnasium,	9,784.84	
Jefferson Physical Laboratory,	4,861.89	
Appleton Chapel,	8,550.36	
Summer Schools,	19,340.71	
Books, from special Funds and gifts,	2,497.48	
Apparatus and expenses for research, from special Funds and gifts,	7,188.35	
Publication expenses, from special Funds and gifts,	3,170.65	
Sundry payments from special Funds and gifts,	19,791.85	
Appropriations for collections and laboratories,	37,143.43	803,237.53

Library, as per Table III (page 84).

Salaries,	\$15,500.00	
Services and wages,	19,362.03	
Books,	25,171.31	
Other expenses,	11,665.68	71,699.04

Divinity School, as per Table IV (page 87).

Salaries for instruction,	\$27,384.56	
Scholarships and Exhibitions,	1,787.06	
Library building alterations,	1,979.35	
Other expenses,	11,971.31	43,122.28

Amount carried forward, \$1,060,161.00

*General Statement of Receipts and Disbursements
for the year ending*

INCOME (*continued*).

Amounts brought forward, . . .		\$185,773.12	\$100,257.90
Interest on Railroad Bonds (<i>continued</i>).			
New York Central & H. R. 3½'s (L. S. & M. S. Coll.),	8,625.00		
New York Central & H. R. 3½'s (M. C. Coll.), . .	1,190.00		
New York, Ontario & Western 4's,	7,884.13		
Northern Pacific-Great Northern Joint 4's,	18,040.00		
Oregon Short Line 5's,	4,583.03		
Pennsylvania Co. 3½'s,	3,447.50		
Pennsylvania Conv. 3½'s,	1,417.50		
Rutland 6's,	284.68		
Rutland Car Trust 4½'s,	4,230.00		
St. Louis & San Francisco Ref. 4's,	4,000.00		
Schenectady 4½'s,	1,273.40		
Second Avenue 5's,	4,605.26		
Terminal R. R. Association of St. Louis 4's, . . .	2,944.45		
Third Avenue 4's,	7,850.31		
Union Pacific 4's,	18,000.00	224,148.38	
Interest on Sundry Bonds (after deducting \$2,969.91 for sinking premiums).			
American Bell Telephone Co. 4's,	\$10,162.71		
" Tel. and Tel. Co. 4's,	8,000.00		
Walter Baker & Co. Ltd. 4½'s,	4,842.75		
Broadway Realty Co. 5's,	10,082.03		
Brookline Gas Light Co. 5's,	250.00		
Chicago Edison Co. 5's,	4,709.60		
Chicago Junc. Railways & Union Stock Yards Co. 5's,	14,979.85		
" " " " 4's,	4,000.00		
The Electric Corporation 7's,	35.00		
Girard Point Storage Co. 3½'s,	691.52		
Metropolitan Tel. & Tel. Co. 5's,	7,500.00		
Mexican Coal & Coke Co. 5's,	150.00		
Montreal Light, Heat and Power Co. 4½'s,	4,466.66		
Municipal Gas & Electric Co. 4½'s,	3,075.00		
New England Tel. & Tel. Co. 6's,	7,128.90		
" " " 5's,	4,058.82		
St. Louis National Stock Yards Co. 4's,	4,000.00	88,132.84	
Dividends on Railroad Stocks.			
Boston & Lowell,	\$2,880.00		
Boston & Maine,	2,219.00		
Fitchburg, preferred,	1,185.00		
Massachusetts Electric Co's., preferred,	2,500.00		
New York Central & Hudson River,	7,490.00		
Northern (N. H.),	1,740.00		
Amounts carried forward, . . .		\$18,014.00	\$412,539.12

*of the Treasurer of Harvard College,
July 31, 1903.*

EXPENSES (*continued*).

Amount brought forward,	\$1,060,161.00	
Law School, as per Table V (page 89).		
Salaries for instruction,	\$44,945.83	
Scholarships,	6,000.00	
Prize,	400.00	
Expenses on account of the proposed addition to Austin Hall,	6,237.50	
Other expenses,	<u>34,384.71</u>	91,968.04
Medical School, as per Table VI (page 90).		
Salaries for instruction,	\$102,091.66	
Fees repaid to Instructors,	5,800.00	
Fellowships,	2,675.00	
Scholarships and Exhibitions,	5,105.84	
Prizes, expenses,	20.82	
Warren Anatomical Museum,	589.69	
Books, from special Funds and gifts,	1,398.36	
Sundry payments made from special Funds and gifts,	4,082.48	
Laboratory appropriations,	13,600.69	
Other expenses,	<u>82,460.41</u>	167,824.95
Medical School Undertaking, as per Table VI (page 95).		
Real estate, Huntington Avenue, Boston, . .	\$22,000.00	
Interest on advances,	18,214.31	
Building expenses, Architects, Engineers, . .	36,000.00	
Other expenses,	<u>1,568.98</u>	77,783.29
Dental School, as per Table VII (page 96).		
Salaries for instruction,	\$12,630.00	
Other expenses,	<u>11,188.79</u>	23,818.79
Museum of Comparative Zoölogy, as per Table VIII (page 97).		
Paid from sundry Funds on the order of the Faculty,	\$35,057.43	
Sturgis Hooper Fund, salary and expenses, .	5,125.14	
Scholarship,	250.00	
Other expenses,	<u>1,649.79</u>	42,082.36
Peabody Museum of American Archae- ology and Ethnology, as per Table IX (page 98).		
Peabody Professor Fund, Peabody Pro- fessor,	\$2,388.41	
Fellowships and Scholarship,	1,785.24	
Other expenses,	<u>7,967.58</u>	
	\$12,141.23	
Less use of heating plant for the Semitic Building,	150.00	11,991.23
Amount carried forward,		\$1,475,629.66

*General Statement of Receipts and Disbursements
for the year ending*

INCOME (*continued*).

Amounts brought forward, . . .	\$18,014.00	\$412,539.12
Dividends on Railroad Stock (<i>continued</i>).		
Old Colony,	2,485.00	
Pennsylvania,	12,801.00	
West End Street, preferred,	208.00	33,508.00
Dividends on Manufacturing Stocks.		
Amoskeag Manufacturing Co.,	\$1,200.00	
Merrimack " "	1,122.00	
Pacific Mills,	2,400.00	4,722.00
Dividends on Real Estate Trust Stocks.		
Barristers Hall Trust,	\$2,500.00	
Boston Real Estate Trust,	675.00	
Essex Street Trust,	3,000.00	
Kimball Building Trust,	150.00	
Paddock Building Trust,	1,783.50	
Post Office Square Building Trust,	4,000.00	12,108.50
Dividends on Sundry Stocks.		
American Express Co.,	\$80.00	
American Telephone & Telegraph Co.,	4,416.67	
Calumet & Hecla Mining Co.,	375.00	4,871.67
Real Estate Investments, from rents, &c., net receipts.		
Cambridge (University Houses and Lands).		
Gross receipts,	\$43,225.18	
Less Taxes,	\$4,764.66	
Insurance,	930.10	
Repairs, improvements, care, &c.,	15,227.14	20,921.90
		\$22,303.28
Boston (general investments).		
Gross receipts,	\$200,631.64	
Less Taxes,	\$43,978.20	
Insurance,	5,128.42	
Repairs, improvements, care, &c.,	6,376.32	55,482.94
		145,148.70
Bussey real estate.		
Gross receipts,	\$38,690.15	
Less Taxes,	\$9,886.40	
Insurance,	20.77	
Interest,	1,293.31	
Repairs, improvements, care, &c.,	5,946.25	
Heat and power,	5,747.00	22,893.73
		15,796.42
Amounts carried forward, . . .	\$183,248.40	\$467,749.29

Amount brought forward, \$1,475,629.66

Observatory, as per Table X (page 99).		
Salaries,	\$15,700.00	
Addition to fireproof building,	4,277.02	
Other expenses,	39,850.27	59,827.29
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Bussey Institution, as per table XI (page 100).		
Salaries for instruction,	\$8,000.00	
Other expenses,	10,865.97	18,865.97
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Arnold Arboretum, as per Table XII (page 101).		
Salaries,	\$3,500.00	
Other expenses,	14,018.15	17,518.15
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Annuities from the following Funds.		
Advancement of Astronomical Science (1901), . .	\$2,380.51	
" " " " (1902), . .	816.22	
Bussey Trust,	4,000.00	
Caroline Brewer Croft,	2,208.60	
Gurney,	1,000.00	
Professorship of Hygiene,	2,000.00	
Alexander W. Thayer,	480.00	
Charles Wilder,	1,920.00	14,805.33
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Class Funds.		
Paid the Secretary of the Class of 1853,		149.00
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Lundry payments.		
Calvin and Lucy Ellis Fund, taxes,	\$93.91	
Charles L. Hancock Fund, taxes on Chelsea real estate,	41.36	
Harvard Memorial Society Fund, Treasurer of the Society,	120.26	
Pennoyer Scholarship Fund, postage and com- missions,	29.15	
Professorship of Hygiene Fund, legal expenses, .	15.75	
John W. & Belinda L. Randall Fund, Treas- urer of Social Service Committee,	100.00	
Rumford Professorship Fund, part of Baring Bros. & Co.'s commissions on account of French Rente, sold in 1888,	72.52	
Mary R. Searle Fund, New York State tax on transfer of securities,	76.50	
Daniel Williams Fund, for the benefit of the Masphee and Herring Pond Indians,	779.96	
Sarah Winslow Fund, to the Teacher at Tyngsborough, Mass.,	112.09	
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Amounts carried forward,	\$1,441.50	\$1,586,295.40

*General Statement of Receipts and Disbursements
for the year ending*

INCOME (*continued*).

Amounts brought forward,	\$183,248.40	\$467,749.29
Real Estate Investments (<i>continued</i>).		
Sundry estates (special investments).		
Gross receipts,	\$6,734.65	
Less Taxes,	\$2,008.06	
Repairs,	433.23	
Insurance,	421.50	
Advances repaid,	63.37	
Interest,	8.17	2,929.33
		3,805.32
		187,053.72
Receipts from Students.		
Tuition fees, regular courses.		
College,	\$432,196.97	
Divinity School,	5,749.54	
Law School,	94,773.50	
Medical School,	82,268.75	
Dental "	11,817.50	
Bussey Institution,	3,565.00	\$680,371.26
Tuition fees, Summer courses.		
College,	\$29,691.17	
Divinity School,	855.00	
Medical "	5,075.00	35,621.17
Laboratory fees.		
College,	\$28,184.17	
Medical School,	3,032.45	
Dental "	2,051.78	33,268.35
Examination fees		
College. Admission,	\$4,735.00	
Condition,	420.00	
Degree of Ph.D.,	30.00	
Medical School. Condition,	468.00	
Dental " "	179.00	5,832.00
Graduation fees.		
College,	\$8,280.00	
Medical School,	3,420.00	11,700.00
Matriculation fees, Medical School,		415.00
Rooms in dormitories.		
College buildings,	\$104,320.00	
Less receipts from students, separately entered in Uni- versity Houses and Lands account,	21,920.00	
	\$82,400.00	
Divinity School buildings,	2,770.00	85,170.00
Amounts carried forward,	\$802,377.78	\$654,808.00

*of the Treasurer of Harvard College,
July 31, 1903.*

EXPENSES (continued).

Amounts brought forward,	\$1,441.50	\$1,586,295.40
Sundry payments (continued).		
Woodland Hill Fund, taxes on Muddy River land, and boundary wall on Walter St.,	3,201.98	
Gifts for Additions to The Soldier's Field, real estate,	5,242.96	
" Improvements and Additions to The Sol- dier's Field, real estate,	6,257.04	
" Cuban Teachers, expenses,	150.00	
" the purchase of land in New Hampshire,	1,692.52	17,986.00
Construction Funds.		
Emerson Hall,	\$1,218.80	
Pierce Hall,	5,055.14	
Semitic Building,	7,309.60	
John Simpkins Hall,	624.54	
Stadium,	27,978.22	
Stillman Infirmary,	2,518.06	
University Museum,	344.29	45,048.65
Total amount of expenses,		\$1,649,330.05

INVESTMENTS AND SUNDRY PAYMENTS.

GENERAL INVESTMENTS.

\$100,000 Chicago & Alton Railway 4% Collateral Notes of 1907,	\$98,350.00
100,000 Chicago & No. Western R. R. Gen. M. 3½'s of 1987,	101,000.00
42,000 Kansas City, Fort Scott & Memphis R.R. Cons. M. 6's of 1928,	51,517.50
114,000 Kansas City, Memphis & Birmingham R. R. Assented Income 5's of 1934,	103,500.00
200,000 Louisville & Jeffersonville Bridge Co. 1st M. 4's of 1945,	191,000.00
100,000 New York Central & Hudson River R. R. 3½'s of 1998 (L. S. & M. S. Coll.),	93,550.00
46,500 Pennsylvania R. R. Conv. 3½'s of 1912 (50%),	23,250.00
100,000 Schenectady Railway 1st M. 4½'s of 1941,	105,000.00
200,000 Terminal R. R. Association of St. Louis Gen. M. Ref. 4's of 1953,	200,000.00
100,000 Third Avenue R. R. (N. Y.) 1st Cons. M. 4's of 2000,	98,487.50
1,000 shares American Tel. & Tel. Co.,	100,000.00
500 " Chicago & No. Western R. R. common,	82,562.50
664½ " Pennsylvania R. R., received in ex- change for \$46,500 Pennsylvania R.R. Conv. 3½'s of 1912,	46,523.00

Amounts carried forward, . . . \$1,294,740.50 \$1,649,330.05

*General Statement of Receipts and Disbursements
for the year ending*

INCOME (*continued*).

Amounts brought forward, \$802,377.78 \$654,803.01

Receipts from Students (*continued*).

Library fines.

College,	\$344.99	
Divinity School,	5.95	350.94

Care of patients in Stillman Infirmary,		4,500.76
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Use of Microscopes.

Medical School,	\$1,010.45	
Dental School,	99.00	1,109.45

Use of lockers, Hemenway Gymnasium,		3,707.50
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Summer Camp, engineering,	6,518.04	818,564.47
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Sundries.

William Pennoyer Annuity,	\$21.22	
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Professorship of Hygiene, from Trustees,	1,220.26	
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Rumford Professorship, from Baring Bros. & Co.,	1.87	
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Asa Gray's copyrights,	823.90	
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Trustees of Edward Hopkins,	200.73	
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Trustee of C. L. Hancock real estate,	1,149.65	
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Trustees of Sturgis Fund, for printing Observatory		
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Annals,	2,756.77	
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Sale of grass, wood, old material, &c.,	6,155.50	
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" old examination papers,	387.92	
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" tickets to Commencement Dinner,	583.00	
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" tickets to Divinity School Alumni Dinner,	47.00	
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" books, pamphlets, catalogues, &c.,	4,698.30	
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Board of horses, cattle, &c., at Bussey Institution,	5,517.97	
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Use of Library by resident graduates and others,	120.00	
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" Gymnasium by graduates and others,	78.88	
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" Buildings (not Univ. Houses and Lands),	6,720.00	
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Fees in Infirmary, Dental School,	4,683.52	35,165.89
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Sundry Gifts for immediate use (see page 22),		415,542.12
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Total amount of income,	\$1,924,075.49	
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RECEIPTS EXCLUSIVE OF INCOME.

GIFTS FOR CAPITAL ACCOUNT.

Rebecca C. Ames Fund,	\$50,000.00	
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Arnold Arboretum Fund (additional),	6,475.00	
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Robert Charles Billings Fund (additional),	7,500.00	
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Robert Charles Billings Fund (Stillman In-		
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firmary),	50,000.00	
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Robert Charles Billings Fund (Gray Herbarium),	15,000.00	
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George W. Dillaway Fellowship Fund,	5,000.00	
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Eaton Professorship of the Science of Government		
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Fund,	100,553.18	
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Amounts carried forward,	\$234,528.18	\$1,924,075.49
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Amounts brought forward, . . \$1,294,740.50\$1,649,380.05

1,440 shares Pennsylvania R. R.,	86,400.00
500 " New York, New Haven & Hartford R.R.,	87,500.00
5,000 rights " " "	5,875.00
750 shares Kimball Building Trust (10%), . . .	7,500.00
Improvements on Gray Estate,	34,812.74
Cancellation of Lease of Hayward Estate,	10,000.00
Advances to Bussey Real Estate, for improvements,	29,282.60
" Cowdin Real Estate, for betterments, .	2,152.94
" Harvard Dining Association, for im-	
provements,	214.47
Invested in notes,	2,024,000.00
Accrued interest and expenses on bonds and notes	
bought,	8,821.86
	3,591,300.11

\$8,000 Kansas City, Fort Scott & Memphis Cons. M. 6's of 1928,	\$9,820.00	
7,500 Pennsylvania R. R. Conv. 3½'s of 1912 (50%), 107½ shares Pennsylvania R. R., received in ex- change for \$7,500 Pennsylvania R. R. Conv. 3½'s of 1912,	8,750.00	7,500.00
\$50,000 Note of Massachusetts Cotton Mills,	50,000.00	
Accrued interest on Bonds bought,	48.00	71,118.00

Estate No. 16 Oxford Street, Cambridge,	\$13,500.00	
Legal expenses thereon,	96.15	13,596.15

Estate, Lucas Street, Boston, taken on account of the debt of the School of Veterinary Medicine,	4,000.00
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11 shares Atchison, Topeka & Santa Fè R. R., preferred,	\$1,078.54	
33 shares Union Pacific R. R., preferred,	3,040.12	
Deposit in Franklin Savings Bank,	1,054.69	
“ Provident Institution for Savings, . . .	1,210.18	
“ Suffolk Savings Bank,	1,585.13	7,968.66

6,000 Mexican Coal & Coke Co. 1st M., S. F. 5's of 1926, . . .	4,800.00
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Amount carried forward, \$5,842,112.97

*General Statement of Receipts and Disbursements
for the year ending*

RECEIPTS EXCLUSIVE OF INCOME (continued).

Amounts brought forward, . . . \$234,528.18 \$1,924,075.49

GIFTS FOR CAPITAL ACCOUNT (continued).

Robert Henry Eddy Fund (additional),	287.00	
George Fabyan Professorship of Comparative Pathology Fund (additional),	25,000.00	
Godkin Lecture Fund,	12,050.00	
Charles Haven Goodwin Scholarship Fund (additional),	500.00	
F. B. Greenough Fund for Surgical Research (additional),	500.00	
Hughes Loan Fund,	500.00	
Jackson Professorship of Clinical Medicine Fund (additional),	12,500.00	
Bertram Kimball Fund,	25,000.00	
Markoe Scholarship Fund,	5,000.00	
Robert Treat Paine Fund (additional),	374.31	
George Foster Peabody Scholarship Fund,	4,800.00	
Henry L. Pierce Residuary Bequest (additional),	45,000.00	
Proctor Fund for the Study of Chronic Diseases,	50,000.00	
Professorship of Hygiene Fund (additional),	20,968.66	
Nelson Robinson Jr. Endowment Fund (additional),	200,000.00	
John D. Rockefeller Gift (additional),	527,450.70	
Herbert Schurz Memorial Free Bed Fund,	3,000.00	
Mary R. Searle Fund,	1,928.75	
Shattuck Professorship of Pathological Anatomy Fund (additional),	12,500.00	
Dunlap Smith Scholarship Fund,	4,700.00	
James Stillman Professorship of Comparative Anatomy Fund,	100,000.00	
Wales Professorship of the Sanskrit Language Fund,	40,000.00	
David Ames Wells Fund (additional),	6,490.15	
Mary L. Whitney Scholarship Fund,	7,798.63	1,340,876.28

SALES, ETC., GENERAL INVESTMENTS.

\$128,000 Walter Baker & Co. Limited 4½'s of 1903, called and paid off at par,	\$128,000.00
100,000 Baltimore & Ohio R. R. Conv. Deb. 4's of 1911,	110,750.00
23,600 Burl. & Mo. River (Neb.) R. R. non. ex. 6's, called and paid off at par,	23,600.00
2,000 Chicago, Burl. & Quincy R. R. 3½'s of 1949,	1,990.00
44,500 Eastern R. R. 1st M. 6's of 1906,	48,505.00
9,000 Fort Scott, South Eastern & Memphis R. R. 1st M. 7's, called and paid off at 105,	9,450.00

Amounts carried forward, \$322,295.00 \$3,264,951.77

*of the Treasurer of Harvard College,
July 31, 1903.*

INVESTMENTS AND SUNDRY PAYMENTS (continued).

Amount brought forward, \$5,842,112.97

SPECIAL INVESTMENTS (continued).

Property received for the Dunlap Smith Scholarship Fund.		
\$5,000 Metropolitan West Side Elevated R. R. Extension M. 4's of 1938,		4,700.00
Property received from the estate of Mrs. Mary R. Searle .		
10 shares American Express Co.,		1,928.75
Property received for the Wales Professorship of Sanskrit Fund.		
Estate Nos. 63 and 65 Cornhill, Boston,		40,000.00
Property received for the Mary L. Whitney Scholarship Fund.		
\$1,300 City of Laramie 10-30, 6% Funding Bonds, \$1,300.00		
Deposit in Winchendon Savings Bank,	6,498.63	7,798.63
Property Received for the Eaton Professorship of the Science of Government Fund.		
Mortgages on Real Estate in New York City,		84,000.00
Property received for the David Ames Wells Fund.		
One-half undivided share of Estate Nos. 101 and 102 Pineapple Street, Brooklyn, New York, valued at		2,500.00

Amount carried forward, \$5,483,040.35

General Statement of Receipts and Disbursements
for the year ending

RECEIPTS EXCLUSIVE OF INCOME (continued).

Amounts brought forward, . . . \$322,295.00\$3,264,951.77

SALES, ETC., GENERAL INVESTMENTS (continued).

500 Pennsylvania R. R. Conv. 3½'s of 1912, exchanged for 664⅔ shares of Pennsylvania R. R. Stock,	46,523.00	
300 Pennsylvania Company 3½'s of 1916, called and paid off at par,	3,000.00	
300 United States 4's of 1925,	547,912.00	
500 shares New York Central & Hudson River R.R., ⅔ share Pennsylvania R.R.,	69,187.50	
11 rights " "	19.29	
11 rights " "	8.45	
187 " Merrimack Manufacturing Co.,	84.90	
paid,	1,098,000.00	
g Bros. & Co., deposit withdrawn,	2,898.16	2,084,918.30

SALES, ETC., SPECIAL INVESTMENTS.

of Investments of Price Greenleaf Fund.

000 Burl. & Missouri River (Nebraska) R. R.		
Non Ex. 6's, called and paid off at par, . .	\$2,000.00	
500 Pennsylvania R. R. Conv. 3½'s of 1912, ex-		
changed for 107½ shares of Pennsylvania		
R. R. Stock,	7,500.00	
200 Rutland R. R. 6's of 1902, paid off at par, . .	12,200.00	
½ share Pennsylvania R. R.,	9.64	
707 rights " "	221.82	
000 Note of Massachusetts Cotton Mills,	50,000.00	71,981.46

of investments of **David Ames Wells Fund.**

000 The Electric Corporation 7's of 1992, . . .	\$974.60	
10 shares " " Stock, . . . . .	.40	975.00

of investments of the Professorship of Hygiene Fund.

11 shares Atchison, Topeka & Santa Fè R. R., preferred,	\$1,078.54	
33 shares Union Pacific R. R., preferred, . . .	3,040.12	
posit in Franklin Savings Bank, withdrawn, . .	1,054.69	
' Provident Institutions for Savings, withdr.,	1,210.18	
' Suffolk Savings Bank, withdrawn,	1,585.13	7,968.66

of Investments of **Mary L. Whitney** Scholar-
ship Fund.

300 City of Laramie 10-30, 6% Funding Bonds,	\$1,310.56	
posit in Winchendon Savings Bank, withdrawn, .	6,498.63	7,809.19

of Investment of **Mary R. Searle Fund.**

10 shares American Express Co.,	1,928.75
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Amount carried forward,	\$5,440,483.13
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*of the Treasurer of Harvard College,
July 31, 1903.*

INVESTMENTS AND SUNDRY PAYMENTS (*continued*).

Amount brought forward, \$5,483,040.35

Amount carried forward, \$5,483,040.35

*General Statement of Receipts and Disbursements
for the year ending*

RECEIPTS EXCLUSIVE OF INCOME (*continued*).

Amount brought forward, \$5,440,483.13

SALES, ETC., SPECIAL INVESTMENTS (*continued*).

Sale of investment of Calvin and Lucy Ellis Fund.		
Undivided half of No. 26 India Wharf, Boston,		5,500.00
Sale of Investment of Calvin and Lucy Ellis Aid Fund.		
Undivided half of No. 26 India Wharf, Boston,		5,500.00
Sale of Investment of Charles L. Hancock Fund.		
Lot No. 59 Fifth Street, Chelsea, Mass.,		300.00
Sale of Investment of Pennoyer Scholarship Fund.		
Asten's Farm, Pulham, Norfolk, England,	\$4,029.52	
Less Baring Bros. & Co.'s commission,	40.30	3,989.22
Received on account of Woodland Hill Fund.		
3079 square feet of land in West Roxbury, taken by the City of Boston for widening Walter Street, . .	\$4,827.00	
Easement in land in West Roxbury, taken by the Metropolitan Sewer Commission,	10,000.00	14,827.00
Note held for James Barr Ames Prize Fund, paid in part, . .		200.00

SUNDRIES.

Harvard Dining Association, to reduce debt,	\$2,100.00	
Randall Hall Association, to reduce debt,	600.00	
Premiums on Bonds, repaid in part,	11,288.08	
Advances for accrued interest and expenses on bonds and notes, repaid,	10,358.75	
Advances to School of Veterinary Medicine, repaid in full from Insurance and Guaranty Fund,	14,114.90	
Advances to Calvin and Lucy Ellis real estate, repaid,	63.37	
Loans to Students, repaid,	2,527.74	
Sundry repayments,	553.19	
Special deposit, to be repaid,	1,000.00	42,555.98

Amount carried forward, \$5,512,855.38

*of the Treasurer of Harvard College,
July 31, 1903.*

INVESTMENTS AND SUNDRY PAYMENTS (*continued*).

Amount brought forward, \$5,488,040.35

Amount carried forward, \$5,488,040.35

*General Statement of Receipts and Disbursements
for the year ending*

RECEIPTS EXCLUSIVE OF INCOME (*continued*).

Amount brought forward, \$5,518,855.33

Bursar's Sundry Accounts.

Receipts during the year.

On account of Harvard Dining Association, . .	\$198,771.77	
“ Randall Hall Association, . .	103,518.76	
On Sundry accounts,	179,184.44	476,424.97

Balance, August 1, 1902.

Cash in Old Boston National Bank,	\$96,114.57	
“ National Union Bank,	11,592.73	
“ City Trust Co.,	1,056.02	
“ hands of Charles F. Mason, Bursar, . . .	16,975.62	
Term Bills due in October, 1902,	238,881.23	
“ overdue,	7,765.25	372,385.42
Total,		\$6,862,165.72

*of the Treasurer of Harvard College,
July 31, 1903.*

INVESTMENTS AND SUNDRY PAYMENTS (*continued*).

Amount brought forward, \$5,483,040.35

Bursar's Sundry Accounts.

Payments during the year.

On account of Harvard Dining Association , .	\$196,714.85	
“ Randall Hall Association , . .	101,079.92	
On sundry accounts,	181,071.03	478,865.80

Balance, July 31, 1903.

Cash in Adams Trust Co.,	\$47,260.22	
“ City Trust Co.,	3,557.44	
“ Old Boston National Bank,	13,922.86	
“ National Union Bank,	62,090.35	
Term Bills due in October, 1903,	241,773.03	
“ overdue,	10,147.50	
Cash in hands of Charles F. Mason, Bursar, . . .	21,508.17	400,259.57
Total,		\$6,362,165.72

The following Account exhibits the State of the Property, as entered upon the Treasurer's Books, July 31, 1903.

Separate Investments, as stated in detail on pages 3, 4, 5 and 6 of this report, consisting of

Railroad Bonds,	\$814,066.11	
Sundry Bonds,	355,167.11	
Railroad Stocks,	327,035.59	
Real Estate Trust Stocks,	80,703.75	
Sundry Stocks,	9,550.00	
University Houses and Lands,	519,337.04	
Bussey Real Estate,	392,710.18	
Other Real Estate,	145,205.30	
Mortgages and Notes,	139,500.00	
Deposits in Massachusetts Hospital Life Ins. Co.,	21,225.00	
Cash in City Trust Co.,	3,523.01	\$2,258,023.09

And "General Investments," as follows:—

Mortgages and Notes.

Mortgages,	\$225,000.00	
Boston Manufacturing Co.'s Notes,	75,000.00	
Boott Cotton Mills' Note,	100,000.00	
Chicago, Burlington & Quincy R. R. Co.'s Note, .	200,000.00	
Coheco Manufacturing Co.'s Notes,	100,000.00	
Edison Electric Illuminating Co.'s Notes,	200,000.00	
Fitchburg R. R. Co.'s Note,	50,000.00	
Manchester Cotton Mills' Note,	50,000.00	
Massachusetts Cotton Mills' Note,	50,000.00	
Merrimack Manufacturing Co.'s Notes,	100,000.00	
Personal Notes, with collateral,	509,000.00	\$1,659,000.00

Railroad Bonds.

\$100,000 Baltimore & Ohio 1st M. 4's of 1948, . .	\$96,625.00	
100,000 Baltimore & Ohio (S. W. Division) 1st M. 3½'s of 1925,	89,750.00	
100,000 Baltimore & Ohio (Pittsburg, Lake Erie & West Virginia System) Ref. M. 4's of 1941,	99,250.00	
125,000 Bangor & Aroostook Cons. Ref. M. 4's of 1951,	118,750.00	
266,800 Burl. & Mo. R. in Nebr. non ex. 6's, . .	270,449.37	
100,000 Chicago & Alton 4% Coll. Notes of 1907, .	98,350.00	
444,000 Chicago, Burl. & Quincy 3½'s of 1949, . .	457,624.89	
100,000 Chicago & No. Western Gen. M. 3½'s of 1987,	100,994.34	
100,000 Chicago & No. Western (Madison Ex- tension) 1st M. 7's of 1911,	113,519.20	
100,000 Chicago, Rock Island & Pacific Gen. M. 4's of 1988,	106,683.88	

Amounts carried forward, . . . \$1,551,996.68 \$3,917,023.09

Amounts brought forward, . . \$1,551,996.68 \$3,917,028.09
 Railroad Bonds (*continued*).

\$100,000 Chicago Terminal Transfer 1st M. 4's of 1947,	95,772.50	
178,500 Eastern, 1st M. 6's of 1906,	179,586.58	
£19,600 " " " Sterling of 1906,	95,888.40	
\$51,000 Fort Scott, So. E. & Mem. 1st M. 7's, . .	49,658.69	
100,000 Indiana, Ill. & Iowa 1st M. 4's of 1950, .	96,500.00	
142,000 Kansas City, Fort Scott & Memphis Cons. M. 6's of 1928,	174,859.20	
114,000 Kansas City, Memphis & Birmingham (assented) Income 5's of 1934,	108,500.00	
300,000 Long Island Unified M. 4's of 1949, . .	283,257.50	
200,000 Louisville & Jeffersonville Bridge Co. 1st M. 4's of 1945,	191,000.00	
100,000 Massachusetts Electric Companies 4½% Gold Coupon Notes of 1906,	98,000.00	
100,000 Metrop. West Side Elevated 4's of 1988, .	91,746.25	
100,000 " " " Ext. M. 4's of 1938,	97,000.00	
100,000 Minneapolis Union 1st M. 5's of 1922, .	102,580.15	
300,000 New York Central & H. R. (L. S. & M. S. Coll.) 3½'s of 1998,	295,964.40	
200,000 New York, Ontario & Western Ref. M. 4's of 1992,	210,312.19	
348,000 Northern Pacific-Great Northern Joint 4's (C. B. & Q. Coll.) of 1921,	164,325.92	
100,000 Oregon Short Line Cons. 1st M. 5's of 1946,	117,929.53	
97,000 Pennsylvania Co. 3½'s of 1916,	94,875.00	
100,000 Rutland Car Trust 4½'s of 1905,	100,540.00	
100,000 Schenectady 1st M. 4½'s of 1941,	104,935.90	
100,000 St. Louis & San Francisco Ref. M. 4's of 1951,	97,125.00	
100,000 Second Ave. (N. Y.) Con. M. 5's of 1948, .	117,763.30	
200,000 Terminal R. R. Association of St. Louis Gen. M. Ref. 4's of 1953,	200,000.00	
200,000 Third Avenue (N. Y.) 1st Consol. M. 4's of 2000,	202,382.41	
400,000 Union Pacific 1st M. & L. G. 4's of 1947, .	353,114.75	5,270,059.35

Sundry Bonds.

\$200,000 American Bell Tel. Co. 4's of 1908, . .	\$202,541.64	
200,000 American Tel. & Tel. Co. 4's of 1929, .	196,000.00	
145,000 Broadway Realty Co. Purchase money 1st M. 5's of 1926,	156,368.02	
100,000 Chicago Edison Co. 1st M. 5's of 1926, .	106,679.20	
250,000 Chicago Junction Railways and Union Stock Yards Coll. Trust 5's of 1915,	250,241.75	

Amounts carried forward, . . . \$911,830.61 \$9,187,082.44

Amounts brought forward, . . .		\$911,830.61	\$9,187,083.44
Sundry Bonds (continued).			
\$100,000 Chicago Junction Railways and Union			
Stock Yards 4's of 1940,	98,500.00		
100,000 Metrop. Tel. & Tel. Co. 1st M. 5's of 1918,	99,500.00		
100,000 Montreal Light, Heat and Power Co. 1st			
M. Coll. Tr. 4½'s of 1932,	100,949.99		
100,000 Municipal Gas & Electric Co. of Rochester, N. Y., 1st M. 4½'s of 1942,			
100,000 New England Tel. & Tel. Co. 6's of 1906,	100,890.60		
100,000 " " " 5's of 1916,	112,235.28		
100,000 St. Louis National Stock Yards Co. 1st			
M. 4's of 1930,	99,500.00	1,623,406.48	
Railroad Stocks.			
500 shares Chicago & No. Western, common,	\$82,562.50		
1225 " N. Y. Central & Hud. River,	64,674.87		
500 " New York, New Haven & Hartford,	93,375.00		
5771 " Pennsylvania,	376,987.80	617,550.17	
Manufacturing and Telephone Stocks.			
12 shares Amoskeag Manufacturing Co.,	\$3,654.00		
187 " Merrimack " "	18,615.10		
24 " Pacific Mills,	16,668.29		
1000 " American Tel. & Tel. Co.,	155,407.25	194,344.64	
Real Estate Trust Stocks.			
1000 shares Essex Street Trust,	\$100,000.00		
1000 " Barristers Hall Trust,	92,766.00		
1089 " Paddock Building Trust,	104,363.72		
750 " Kimball Building Trust (10% paid),	7,500.00		
1000 " Post Office Square Building Trust,	103,000.00	407,629.73	
Real Estate.			
Adams Estate, Washington Street, Boston,	\$250,000.00		
Amory Estate, Franklin Street, Boston,	165,615.81		
Estate, Haymarket Square, Boston,	58,913.52		
Gerrish Block, Blackstone and North Streets, Boston,			
192,875.75			
Gray Estate, Washington Street, Boston,	869,044.51		
Hayward Estate, Washington Street, Boston,	586,361.88		
Lowell Estate, Washington Street, Boston,	464,368.91		
Townsend Estate, Hawkins Street, Boston,	44,569.49		
Webb Estate, Washington Street, Boston,	164,604.79	2,796,354.66	
Sundries.			
Advances to Bussey Trust,	\$59,068.11		
" Medical School Undertaking,	485,763.24		
" Observatory,	3,362.84		
" Peabody Museum of American Archaeology and Ethnology,	3,123.51		
Amounts carried forward,		\$551,317.70	\$14,826,368.11

Amounts brought forward, . . .		\$551,817.70	\$14,826,368.11
Sundries (continued).			
Advances to Botanic Department,	6,897.98		
“ Harvard Dining Association,	44,389.16		
“ Randall Hall Association,	88,702.27		
“ Classical Publication Fund of the			
Class of 1856,	615.72		
“ Cowdin Real Estate,	2,152.94		
“ Sundry Accounts,	1,891.26		
	<u>\$640,417.03</u>		
Term bills due in October, 1903,	241,773.08		
“ overdue,	10,147.50	892,337.56	
	<u>892,337.56</u>		
Cash in Adams Trust Co.,	\$47,260.22		
“ City Trust Co.,	84.48		
“ Old Boston National Bank,	13,922.86		
“ National Union Bank,	62,090.85		
“ hands of Charles F. Mason, Bursar,	21,508.17	144,816.08	
	<u>144,816.08</u>		
Total,		\$15,868,521.70	

The foregoing Property represents the following Funds and Balances, and is answerable for the same.*

Principal, Aug. 1, 1902.	UNIVERSITY FUNDS.	Principal, July 31, 1902.
\$4,950.00	Andrew Bigelow (1898),	\$4,950.00
5,000.00	Stanton Blake (1899)	5,000.00
4,771.33	Charlotte F Blanchard (1891), .	4,771.33
5,250.00	Samuel D. Bradford (1866), . .	5,250.00
12,500.00	John W Carter (1898),	12,500.00
154.91	Thomas Cotton 1727),	154.72
22,000.00	John Cowdin (1888)	22,000.00
115,966.56	George B. Dorr (1882),	115,966.56
48,458.50	George Draper (1892),	48,458.50
56,500.00	R. H. Eddy 1901),	56,787.00
101,225.49	Harvard Ellis (1895)	101,225.49
5,322.09	John Davis Williams French (1901),	5,322.09
20,571.18	Gore (1834),	20,571.18
25,000.00	John C. Gray (1881),	25,000.00
20,000.00	Walter Hastings (1888),	20,000.00
5,000.00	George Baxter Hyde (1895), . .	5,000.00
132,288.30	Insurance and Guaranty (1860), . .	91,885.23
16,871.63	Leonard Jarvis (1859),	16,871.63
10,000.00	Henry P Kidder (1894),	10,000.00
10,000.00	Joseph Lee (1802),	10,000.00
10,000.00	Theodore Lyman (1898),	10,000.00
81,950.54	Henry T Morgan (1888),	81,950.54
15,750.00	Israel Munson 1844),	15,750.00
113,817.44	Francis E Parker (1886),	113,817.44
30,000.00	William Perkins (1888),	30,000.00
50,814.19	Henry L. Pierce (1898),	50,475.41
164,780.10	Henry L. Pierce (Residuary) (1898),	
	Total received, \$798,000.00	
	Appropriated for Pierce	
	Hall \$242,525.04	
	Appropriated for the Medi-	
	cal School Undertaking, 350,000.00	
	\$592,525.04	205,474.96
63,671.55	President's (1883),	63,598.41
364,358.75	Retiring Allowance (1879),	366,416.47
23,370.03	John L. Russell (1889),	23,370.03
	Mary R. Searle (1903),	1,902.61
46,913.13	Isaac Sweetser (1894),	46,913.13
5,000.00	Seth Turner 1883),	5,000.00
50,000.00	Henry Villard (1902),	50,000.00
100,000.00	William F. Weld (1893),	100,000.00
\$1,742,255.72	. . . Amounts carried forward,	\$1,746,382.71

* The dates of the establishment of the Funds are printed after their titles.

Principal,
Aug. 1, 1902.

Principal, July 31, 1908.

\$1,742,255.72	.. Amounts brought forward,	\$1,746,382.73
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* COLLEGE FUNDS.

8,944.63	John W. P. Abbot (1874), . . .	\$9,363.26
27,748.64	Alford Professorship (1765), . . .	27,748.64
6,230.00	Daniel Austin (1879)	6,230.00
	Robert Charles Billings , for	
	Gray Herbarium (1903),	15,000.00
1,050.00	John A. Blanchard (1873 , . .	1,050.00
39,780.00	Botanic Department 1880) . . .	39,780.00
28,337.40	Boylston Professorship (1772), . .	28,337.40
11,146.01	Francis James Child Mem (1897),	11,224.29
7,105.12	Classical Publ. F'd of Class of 1856	
	(1888),	7,105.12
150,445.04	Class Subscription 1870),	150,445.04
	Cryptogamic Herbarium (balance), .	465.43
57,792.30	T Jefferson Coolidge Fund for	
	Research in Physics,	58,245.94
3,400.54	Paul Dudley (175),	3,459.71
	Eaton Professorship (1903), . . .	101,414.59
21,619.50	Eliot Professorship 1814),	21,619.50
10,000.00	Eliot " (Jon. Phillips'	
	gift)(1854),	10,000.00
3,500.01	Erving Professorship (1791), . . .	3,500.01
35,990.99	Fisher " (1834),	35,990.99
394.02	Henry Flynt (1760),	412.46
16,240.38	Fund for Permanent Tutors (1796),	16,240.38
1,038.57	Fund for Religious Services (1887), .	1,038.57
	Godkin Lecture (1903),	12,329.57
6,324.44	Gospel Church 1868),	6,472.42
2,360.30	Gray Herbarium (balance),	1,900.48
32,511.00	Asa Gray Memorial (1898), . . .	32,511.00
21,628.01	Asa Gray Professorship of Systematic Botany (1897),	21,595.16
195,039.84	Gurney (1888),	195,417.71
15,124.00	Harvard Oriental Series (1899), . .	15,066.80
20,655.91	Herbarium (1865),	20,655.91
20,217.08	Hersey Professorship (1772), . . .	20,217.08
21,744.18	Hersey Professorship (Thomas	
	Lee's gift) 1856),	21,744.18
34,517.60	Hollis Professorship of Divinity (1726),	34,517.60
3,747.33	Hollis " of Mathematics (1713),	3,747.33
5,675.11	Ingersoll Lecture (1894),	5,940.70
3,371.62	Jefferson Physical Lab'y (balance ,	2,177.53
10,070.05	Lectures on Political Economy (1889),	10,541.32
15,796.97	Lee Fund for Reading (1863), . . .	15,796.97
107,178.26	Henry Lee Professorship 1900), .	108,344.19
12,688,975.57	.. Amounts carried forward, . . .	\$1,077,542.28 \$1,746,382.73

* Including some actually used in the Graduate School.

Principal, Aug. 1, 1902.		Princip
\$2,688,975.57	. . Amounts brought forward, . . .	\$1,077,542
8,867.18	Joseph Lovering 1891),	7,968
66,407.31	Lowell Fund for a Botanic Garden (1882) (formerly Professorship of Natural History 1805),	66,407
43,062.93	McLean Professorship (1834), . .	43,062
22,175.86	William B. Noble Lectures (1898),	22,626
14,063.32	Daniel H. Peirce (1876),	14,129
21,000.00	Perkins Professorship 1841), . .	21,000
31,500.00	Jonathan Phillips (1861), . . .	31,500
75,000.00	Physical Laboratory Endowm't (1881),	75,000
25,020.19	Plummer Professorship (1854), . .	25,020
52,500.00	Pope " (1868), . .	52,500
190,851.69	Professorship of Hygiene (1899), . .	219,858
305,086.88	Nelson Robinson, Jr. 1899), .	510,000
56,441.25	Rumford Professorship (1819), . .	56,368
2,000.00	John L. Russell 1889)	2,000
60,494.93	Gurdon Saltonstall (1901), . .	60,000
4,364.73	George William Sawin 1890),	4,425
1,734.26	Schol. & Benef. money returned (bal.),	
1,030.94	Barthold Schlesinger (1901), .	62
23,139.83	Smith Professorship (1816), . . .	23,139
12,811.14	Josiah Stickney 1899),	12,811
16,295.84	John E. Thayer (1885),	16,483
1,174.81	Elizabeth Torrey (1896), . . .	1,193
10,590.34	Henry Warren Torrey (1890), .	11,142
100,855.67	Unknown Memorial (1898), . . .	100,918
	Wales Professorship (1903), . . .	40,000
17,449.24	Samuel Ward 680),	15,500
6,779.68	Cyrus M. Warren (1893), . . .	6,577
121,526.76	Henry C. Warren (1899), . . .	121,229
5,344.14	Sylvester Waterhouse (1896), .	5,594
50,000.00	Increase S. Wheeler (1889), . .	50,000
968.47	Chauncey Wright 1884), . . .	989
2,857.91	Gifts for Books, Prints, Casts, etc., for Dept. of Architec. (bal.),	
1,797.71	" Cases, etc. at Botanic Gar- den (balance	1,486
281.37	" Classical Library (balance),	174
322.52	" Collections for a Germanic Museum (balance)	322
	" Engineering Department, Elec- trical Apparatus (bal),	1,770
	" The Ethics of the Social Questions (bal.),	2,511
1,438.52	" Land in New Hampshire (bal.),	
53.15	" Physical Research "	39
	" Plantation of Shrubs, etc. "	3,787
\$4,043,764.14	. . Amounts carried forward, . . .	\$2,705,093

Principal, Aug. 1, 1902.		Principal, July 31, 1903.	
4,043,764.14	. . . Amounts brought forward, . . .	\$2,705,093.60	\$1,746,382.73
3,460.53	Gifts for Salaries (balance),	1,516.95	
1,352.70	" Sanskrit Department (bal.),	99.57	
16,932.57	" Semitic Collection (balance),	12,940.82	
1,106.20	" Library "	1,009.41	
1,941.49	" Sugar-cane investigation, etc. (balance	990.47	
2,043.02	Sundry Gifts (unexpended balances),	1,971.53	
FELLOWSHIP FUNDS.			
	George Wales Dillaway (1903),	5,048.77	
11,159.41	Ozias Goodwin Memorial (1889),	11,231.65	
10,836.85	Harris (1868 ,	10,844.02	
	Indic Philology (balance),	300.00	
10,927.81	John Thornton Kirkland (1871),	10,989.24	
11,540.59	Henry Lee Memorial 1889), . .	11,630.71	
14,100.00	Charles Eliot Norton (1901), .	14,400.00	
12,656.14	Robert Treat Paine (1887), . .	12,748.44	
56,533.87	John Parker (1873),	57,079.66	
31,959.15	Rogers (1869),	32,729.83	
11,389.24	Henry Bromfield Rogers Memo- rial (1889),	11,472.24	
125.00	South End House (balance),		
11,807.05	John Tyndall (1885),	12,359.62	
11,400.03	James Walker (1881),	11,433.55	
22,645.03	Whiting (1896),	22,804.82	
SCHOLARSHIP FUNDS.			
3,725.29	Abbot (1852),	3,799.62	
1,889.81	Alford (1785),	1,978.26	
5,377.03	Bartlett (1881),	5,378.67	
5,703.00	Bassett (1876),	5,699.90	
12,959.87	Bigelow (1865 ,	13,066.40	
2,199.91	Borden (1896)	2,302.87	
112,985.50	Bowditch (1864),	113,573.22	
2,668.19	Bright (balance ,	2,896.39	
3,782.93	Browne (1687),	3,859.97	
5,163.11	Morey Willard Buckminster (1898),	5,204.74	
32,843.73	Burr (1895),	33,180.83	
6,108.63	Ruluff S. Choate (1884),	6,119.53	
8,309.11	Class of 1802 (1870),	8,272.97	
3,161.67	" 1814 (1853),	3,184.65	
6,471.15	" 1815 (Kirkland) (1852),	6,523.99	
4,555.91	" 1817 (1852),	4,544.13	
3,475.18	" 1828 (1882),	3,487.81	
4,856.92	" 1835 (1853),	4,909.23	
5,134.03	" 1841 (1871),	5,107.64	
5,133.00	" 1852 (Dana) (1876), . .	5,106.56	
4,524,184.79	. . . Amounts carried forward, . . .	\$3,186,892.28	\$1,746,382.73

Principal, Aug. 1, 1902.		Principal, July 31, 1903.	
\$4,524.184.79	. . . Amounts brought forward, . . .	\$3,186,892.28	\$1,746,382.73
15,509.52	Class of 1856 (1885),	15,735.39	
4,669.81	“ 1867 (1886),	4,718.37	
5,030.00	“ 1877 (1902),	5,065.40	
5,312.00	“ 1883 (1900),	5,362.00	
11,853.25	Crowninshield (1877)	11,882.97	
600.00	W. H. Cudworth (balance), . .	600.00	
5,425.39	Francis H. Cummings (1898), .	5,679.28	
5,530.80	Geo. and Martha Derby (1881),	5,539.65	
4,970.03	Julius Dexter 1892),	5,027.63	
2,756.65	O. W. Doe (1893),	2,785.68	
5,480.45	W. S. Eliot (1875),	5,486.91	
40,355.01	Joseph Eveleth (1896),	40,856.94	
2,126.46	Fall River (1893),	2,145.96	
6,298.75	Farrar (1873),	6,260.20	
11,280.61	Richard Augustine Gambrill (1890),	11,383.56	
7,081.23	Charles Haven Goodwin (1889),	7,618.47	
4,191.73	Greene (1863),	4,237.92	
400.00	Price Greenleaf (balance), . . .		
23,605.70	William Hilton (1897),	23,630.46	
10,020.02	John Appleton Haven (1902), .	10,088.96	
10,587.85	Ebenezer Rockwood Hoar (1895),	10,750.03	
6,248.49	Levina Hoar 1876),	6,290.90	
13,588.01	Hodges (1878),	13,614.36	
6,160.37	Hollis (1722),	6,223.66	
10,749.94	Henry B. Humphrey (1890), . .	10,878.04	
30,240.00	C. L. Jones (1901),	30,455.23	
10,323.77	G. E. Lowell (1886),	10,340.27	
	Markoe 1903),	5,117.00	
2,834.65	Matthews (balance),	2,728.51	
6,048.99	Merrick (1888),	6,107.08	
8,206.43	Morey (1868),	8,240.47	
5,730.68	Lady Mowison (1643),	5,773.89	
5,550.54	Howard Gardner Nichols (1897),	5,610.33	
5,252.46	Lucy Osgood (1873),	5,498.25	
	George Foster Peabody (1902),	4,950.00	
6,524.03	Pennoyer 1670),	6,230.81	
4,254.50	Perkins (1869)	4,303.59	
1,490.97	Wendell Phillips Mem'l (1895),	1,527.41	
350.00	Ricardo Prize (balance),	350.00	
1,204.93	Rodger (1883),	1,111.32	
3,423.90	Henry B. Rogers (1859),	3,484.14	
5,643.93	Edward Russell (1877),	5,708.07	
5,512.27	Sales (1893) ,	5,603.57	
11,072.51	Saltonstall (1739),	11,107.39	
8,406.16	Leverett Saltonstall (1895), . .	8,474.56	
6,921.09	Mary Saltonstall (1730),	6,894.99	
\$4,873,008.67	. . . Amounts carried forward, . . .	\$3,548,366.90	\$1,746,382.73

Principal,
Aug. 1, 1902.

Principal, July 31, 1908.

\$4,873,008.67	Amounts brought forward, . . .	\$3,548,866.90	\$1,746,882.78
100.00	James Savage (balance),		
3,289.68	Sever (1868)	3,291.31	
10,872.50	Sewall (1696),	10,914.65	
48,838.85	Shattuck (1854),	49,224.51	
6,078.69	Slade (1877),	6,029.85	
	Dunlap Smith (1903),	4,700.00	
4,440.63	Story (1864)	4,478.47	
2,729.48	Stoughton 1701),	2,796.64	
2,287.72	Swift (1899),	2,394.80	
77,741.90	Thayer (1857),	78,380.23	
4,160.64	Gorham Thomas (1865),	4,205.37	
7,585.49	Toppan (1868),	7,640.47	
25,369.89	Townsend (1861),	25,640.54	
4,695.06	Walcott 1855	4,848.13	
10,426.41	Christopher M. Weld (1899), .	10,514.35	
5,271.93	Jacob Wendell (1899),	5,318.66	
11,496.10	Whiting (1874),	11,667.45	
	Mary L. Whitney (1903), . . .	7,901.91	

BENEFICIARY AND LOAN FUNDS.

	Rebecca C. Ames (1903), . . .	50,403.46	
524.78	Nathaniel Appleton (1772), . .	549.35	
1,685.92	Frank Bolles Memorial (1894), .	1,764.82	
1,439.19	William Brattle (1717),	1,506.54	
937.09	Thomas Danforth (1724), . . .	980.94	
5,448.78	Moses Day (1880),	5,448.73	
874.83	John Ellery (1738),	892.38	
1,333.34	Exhibitions (1796),	1,333.34	
702.90	Thomas Fitch (1737),	735.80	
404.05	Ephraim Flynt (1723),	422.96	
140.50	Henry Flynt (1760),	147.05	
420.06	Henry Gibbs (1722),	439.72	
2,782.55	John Glover (1653),	2,912.79	
7,786.09	Price Greenleaf Aid (balance), .	10,321.53	
337.33	Edward Holyoke (1748),	342.80	
2,226.08	Robert Keayne (1659),	2,330.26	
	Bertram Kimball (1903), . . .	25,195.02	
921.29	Mary Lindall 812),	964.39	
5,460.64	Susan B. Lyman (1899),	5,716.22	
196.78	Anne Mills (1725)	206.00	
10,855.32	Munroe (1880),	10,855.32	
2,008.12	Palfrey Exhibition (1821), . . .	2,022.09	
4,408.02	Dr A. P. Peabody Memorial (1896),	4,617.36	
187.42	Joseph Sewall (1765),	196.17	
14,349.15	Alexander W. Thayer (1899), .	14,540.68	
11,155.10	Quincy Tufts (1877),	11,155.10	
253.03	Benjamin Wadsworth (1787), .	264.87	
\$5,174,681.95	Amounts carried forward, . . .	\$3,944,074.98	\$1,746,882.78

Principal, Aug 1, 1902.		Principal, July 31, 1903.
\$5,174,681.95	. . . Amounts brought forward, . . .	\$3,944,074.93 \$1,746,382.71

PRIZE FUNDS.

1,426.43	James Gordon Bennett (1893), .	1,493.17
29,414.82	Bowdoin Prizes for Dissertations (1791),	30,191.44
8,591.62	Boylston Prizes for Elocution (1817),	3,504.78
5,195.21	Coolidge Debating (1899),	5,238.34
100.00	Dante (balance)	100.00
1,899.14	Edward Hopkins Gift for "De- turs" (1718) (balance),	1,954.49
1,065.84	Sales (1892),	1,115.73
2,622.69	John O. Sargent (1889),	2,545.45
7,000.00	George B. Sohler (1890),	7,000.00
3,233.20	Charles Sumner (1874)	3,384.51
3,676.95	Robert N. Toppan (1894),	3,699.03
2,115.97	Philip Washburn (1899),	2,215.00
93,306.66	David A. Wells (1901),	104,286.62 4,110,803.44

LIBRARY FUNDS.

2,122.60	Bowditch (1861),	\$2,132.83
166.17	Bright (balance),	133.80
584.82	Fund of the Class of 1851 (1899),	612.20
575.84	" " " 1851 (C. F. Dunbar's Gift) (1899),	602.80
27,758.74	Edwin Conant (1892),	27,744.03
25,992.72	Constantius (1886),	25,953.22
5,302.03	Denny (1875),	5,311.89
5,299.73	Farrar (1871),	5,317.02
3,187.68	Haven (1844),	3,207.48
10,086.23	Hayes (1885),	10,049.01
5,295.80	Hayward (1864),	5,244.23
368.79	R. M. Hodges (balance),	578.02
2,869.83	Hollis (178) ,	2,871.89
2,133.80	Homer (1871),	2,169.95
500.00	Jarvis (1885),	500.00
5,302.13	Lane (1863),	5,297.53
26,269.29	Lowell (1881),	26,571.17
60,520.35	Minot (1870),	60,478.15
7,145.32	Lucy Osgood (1873),	7,150.89
7,021.73	Mary Osgood (1860),	6,995.40
3,949.25	Sales (1892),	3,951.97
5,292.61	Salisbury (1858),	5,313.10
20,180.15	Sever (1878),	20,089.13
3,979.82	Shapleigh (1801),	3,981.56
65.26	George B. Sohler (balance), . .	69.31
10,717.38	Subscription for Library (1859), .	10,576.94
37,611.34	Sumner (1875),	37,605.05
\$5,609,129.89	. . . Amounts carried forward, . . .	\$280,008.52 \$5,857,186.11

Principal,
Aug. 1, 1902.

Principal, July 31, 1903.

5,609,129.89	.. Amounts brought forward, . . .	\$280,008.52	\$5,857,186.17
5,091.66	Kenneth Matheson Taylor (1899),	5,081.17	
11,925.34	Daniel Treadwell (1885), . . .	11,925.34	
5,231.63	Ishabod Tucker (1875), . . .	5,243.89	
15,910.44	Walker (1875),	15,871.24	
5,301.74	Ward (1858)	5,299.44	
247.74	Waterston Gift (balance), . . .	259.35	
20,169.70	J. Huntington Wolcott (1891),	20,105.66	
100,000.00	Eben Wright 1883),	100,000.00	
2,048.87	Sundry Gifts (unexpended bals.), . .	1,447.10	
	Sundry balances ,	149.03	445,890.74

DIVINITY SCHOOL FUNDS.

37,254.83	Divinity School (balance),	\$22,727.90	
71,427.02	New Endowment 1879),	71,427.02	
17,000.00	Oliver Ames 1880)	17,000.00	
525.00	Hannah C Andrews (1836), . .	525.00	
890.00	Daniel Austin 1880),	890.00	
1,000.00	Adams Ayer (1869)	1,000.00	
7,875.00	Joseph Baker 1876),	7,875.00	
2,057.18	Beneficiary money returned (balance),	174.10	
3,869.28	Rushton Dashwood Burr (1894),	4,050.35	
37,583.74	Bussey Professorship (1862), . .	37,583.74	
2,177.95	Joshua Clapp (1836),	2,177.95	
5,000.00	Edwin Conant 1892),	5,000.00	
20,280.38	Dexter Lectureship (1810), . . .	25,544.37	
48,510.57	Frothingham Professorship (1892),	50,780.89	
1,050.00	Abraham W Fuller (1847), . .	1,050.00	
911.34	Lewis Gould (1852),	911.34	
721.73	Louisa J. Hall (1893),	754.85	
6,008.43	Hancock Professorship (1765), .	6,008.43	
76,885.81	Charles L. Hancock (1891), . .	76,885.81	
5,000.00	Haven (1898)	5,000.00	
1,050.00	Samuel Hoar (1857),	1,050.00	
10,000.00	Henry P Kidder (1881), . . .	10,000.00	
9,184.69	Henry Lienow (1841),	9,184.69	
1,050.00	Caroline Merriam (1867), . . .	1,050.00	
16,015.81	Parkman Professorship 1814), .	16,015.81	
482.95	John W Quinby (1888), . . .	505.55	
1,000.00	Abby Crocker Richmond (1881),	1,000.00	
1,000.00	John L. Russell 890)	1,000.00	
10,000.00	William B. Spooner (1890), . .	10,000.00	
40,000.00	Thomas Tileston of New York		
	Endowment (1879)	40,000.00	
5,250.00	Mary P. Townsend (1861), . .	5,250.00	
2,100.00	Winthrop Ward 1862),	2,100.00	
54,345.73	Winn Professorship (1877), . .	54,845.73	
	Gift for Divinity Hall Chapel altera-		
	tions ,	525.00	
36,372,564.45	.. Amounts carried forward, . . .	\$489,893.53	\$6,302,576.91

Principal, Aug. 1, 1902.		Principal, July 31, 1903.
\$6,272,564.45	. . . Amounts brought forward, . . .	\$489,893.53 \$6,302,576.91

SCHOLARSHIP AND BENEFICIARY FUNDS.

18,069.65	Abner W Buttrick (1880), . . .	13,231.33	
5,491.62	Thomas Cary 1820)	5,668.65	
2,702.31	George Chapman (1834 , . . .	2,728.76	
4,429.41	Joshua Clapp (1839)	4,456.69	
14,849.94	Jackson Foundation (1835), . . .	14,958.26	
5,350.05	J. Henry Kendall (1863), . . .	5,400.43	
3,431.46	Nancy Kendall 1846),	3,452.03	
1,050.00	William Pomroy (1835),	1,050.00	540,839.68

LAW SCHOOL FUNDS.

205,860.56	Law School (balance),	\$236,882.74	
4,150.62	James Barr Ames Prize (1898),	3,533.97	
65,840.47	Bemis Professorship (1879), . . .	67,921.78	
23,979.82	Bussey " (1862), . . .	23,979.82	
15,750.00	Dane " (1829), . . .	15,750.00	
	Hughes Loan (1903),	501.97	
47,021.25	Law School Book 1882),	47,021.25	
100,000.00	Law School Library (1898),	100,000.00	
8,340.81	Royall Professorship 781),	8,340.81	
1,327.77	Scholarship money returned (balance),	1,389.92	
94,994.97	Weld Professorship (1882),	94,994.97	600,317.23

LAWRENCE SCIENTIFIC SCHOOL FUNDS.

101.40	Edward Austin Loans repaid (bal.),	\$758.37	
30,686.85	John B. Barringer (1873)	30,686.85	
5,592.83	George A. Gardner (1892), . . .	5,579.93	
10,611.50	Hennen Jennings Scholarship (1898),	10,708.10	
61,536.43	Abbott Lawrence (1859),	61,536.43	
50,375.00	James Lawrence 1865),	50,375.00	
33.00	Lawrence Scientific School Loans		
	repaid (balance),	456.21	
40,805.73	Professorship of Engineering (1847),	40,805.73	
25,000.00	Arthur Rotch (1895)	25,000.00	
5,304.70	Stuart Wadsworth Wheeler (1898),	5,306.97	
	Lawrence Scientific School Associ-		
	ation Scholarship (balance),	50.00	231,263.59

MUSEUM OF COMPARATIVE ZOÖLOGY FUNDS.

34,370.78	Museum of Comparative Zoölogy (bal.),	\$29,034.40	
297,933.10	Agassiz Memorial (1875),	297,933.10	
7,594.01	Teachers' and Pupils' 1875), . . .	7,594.01	
5,511.23	Virginia Barret Gibbs Scholar-		
	ship (1892),	5,519.15	
\$7,465,161.72	. . . Amounts carried forward, . . .	\$340,080.66	\$7,674,997.41

Principal, Aug. 1, 1902.		Principal, July 31, 1908.
\$7,465.161.73	. . . Amounts brought forward, . . .	\$340,080.66 \$7,674,997.41
50,000.00	Gray Fund for Zoölogical Museum (1859),	50,000.00
108,467.36	Sturgis Hooper (1865),	108,386.98
7,740.66	Humboldt (1869),	7,740.66
5,000.00	Willard Peele Hunnewell (1901),	5,000.00
117,469.34	Permanent (1859),	117,469.34 628,677.59

**PEABODY MUSEUM OF AMERICAN ARCHAEOLOGY
AND ETHNOLOGY FUNDS.**

11,468.09	Hemenway Fellowship (1891), .	\$11,579.79	
28,355.56	Peabody Building (1866)	28,355.56	
47,335.10	Peabody Collection (1866), . . .	47,335.10	
47,568.51	Peabody Professor (1866), . . .	47,529.77	
30,175.49	Thaw Fellowship (1890),	30,164.15	
10,795.03	Henry C. Warren Exploration (1899),	10,347.01	
5,000.00	Susan Cornelia Warren (1902),	5,000.00	
5,362.08	Robert C. Winthrop Scholarship (1895),	5,413.02	
21,024.18	Huntington Frothingham Wol- cott (1891),	20,621.90	206,346.30

MEDICAL SCHOOL FUNDS.

60,042.31	Medical School (balance),	\$46,173.58	
11,075.58	Edward Austin (Bacteriological Laboratory) (1899),	11,261.86	
25,512.68	Edward M. Barringer (1881), .	25,512.68	
6,246.61	J Ingersoll Bowditch (1889), .	6,212.34	
2,768.71	Boylston Fund for Medical Books (1800),	2,563.14	
20,399.96	John B. & Buckminster Brown Endowment (1896)	20,854.68	
92,025.00	Caroline Brewer Croft (1899),	92,338.38	
378,550.19	Calvin and Lucy Ellis (1899), .	380,987.73	
101,702.24	George Fabyan (1896),	101,702.24	
1,836.08	Samuel E. Fitz (1884),	1,836.08	
2,116.56	F B. Greenough (Surgical Re- search) (1901),	2,500.00	
19,192.65	Jackson Medical (1859),	19,192.65	
1,681.11	Medical Library (1872)	1,759.78	
52,900.33	William O. Moseley (1897), . .	52,900.33	
38,750.00	New Subscription (1888),	38,750.00	
9,335.94	Dr Ruppenan (1897),	9,335.94	
50,000.00	Geo. C. Shattuck (1853),	50,000.00	
5,918.66	Surgical Laboratory 1897),	5,681.98	
15,765.11	Mary W. Swett (1884),	15,765.11	
6,856,737.84	. . . Amounts carried forward, . . .	\$885,328.40	\$8,510,021.30

Principal, Aug. 1, 1902.		Principal, July 31, 1903.	
\$8,856,737.84	. . . Amounts brought forward, . .	\$885,328.40	\$8,510,021.30
20,000.00	Samuel W. Swett (1884), . . .	20,000.00	
2,000.00	Quincy Tufts (1879),	2,000.00	
14,359.37	Warren Fund for Anatomical Mu- seum (1848),	14,441.68	
41,920.00	Charles Wilder (1900),	41,872.00	
33,681.45	Henry Willard Williams (1893),	34,007.72	
1,455.77	Gifts for Pathological Dep't Library (balance),	923.62	
1,482.23	Sundry Gifts (unexpended balances),	2,890.50	
FELLOWSHIP FUNDS.			
5,321.12	Geo. Cheyne Shattuck Memorial (1891),	5,345.14	
5,621.65	Charles Eliot Ware Memorial (1891),	5,659.76	
5,280.14	John Ware Memorial (1891), . .	5,302.25	
SCHOLARSHIP FUNDS.			
5,146.42	Lucius F. Billings (1900), . . .	5,107.25	
5,833.06	D. W. Cheever (1889),	5,756.04	
3,162.46	Cotting Gift (1900),	3,135.44	
2,758.57	Orlando W. Doe (1893),	2,787.69	
152.63	John Foster income for Medical Students (balance),	61.05	
5,743.91	Lewis and Harriet Hayden (1894),	5,733.47	
6,320.63	C. M. Jones 1893),	6,466.45	
5,284.93	Alfred Hosmer Linder (1895),	5,332.27	
5,504.50	Charles B. Porter (1897), . . .	5,642.09	
4,557.74	Charles Pratt Strong (1894), .	4,671.05	
6,346.51	Isaac Sweetser (1892),	6,398.55	
5,283.01	John Thompson Taylor (1899),	5,250.26	
5,306.30	Edward Wigglesworth (1897), .	5,354.62	
PRIZE FUNDS.			
3,540.50	Boylston (1803),	3,685.35	
6,507.73	William H. Thorndike (1895),	6,812.30	1,089,959.95
MEDICAL SCHOOL UNDERTAKING FUNDS.			
93,610.00	Robert C. Billings (1900), . . .	\$104,898.05	
	George Fabyan (addition of 1903),	25,375.40	
101,322.02	George Higginson Professorship (1902),	101,563.89	
12,500.00	Jackson Professorship (addition of 1902),	25,000.00	
354,200.00	Henry L. Pierce (1898),	370,776.56	
	Proctor (1903),	51,267.48	
\$9,620,940.49	. . . Amounts carried forward, . . .	\$678,881.38	\$9,599,981.35

Principal, Aug. 1, 1902.		Principal, July 31, 1903.
\$9,620,940.49	. . Amounts brought forward, . . .	\$678,881.38 \$9,599,981.25
312,463.29	John D. Rockefeller Gift (1902),	863,875.59
25,300.00	David Sears Gift (1902),	126,629.80
13,500.00	Shattuck Professorship (addition of 1902),	26,000.00
	Stillman Professorship (1902), . .	104,484.98
4,431.98	School of Comparative Medicine (1899),	4,639.40
4,968.79	Gift for Pathological Laboratory, . .	5,201.34
1,011.78	Gift for buildings,	
		1,809,712.49

DENTAL SCHOOL FUNDS.

32,024.51	Dental School (balance),	\$39,899.71	
2,255.85	Dental School Endowment (1880), .	2,255.85	
23,000.00	Henry C. Warren Endowment (1889),	23,000.00	
19,872.32	Gifts for Building (1892),	20,802.33	75,957.89

OBSERVATORY FUNDS.

50,380.51	Advancement of Astron. Science (1901),	\$50,357.83	
20,054.91	Advancement of Astron. Science (1902),	20,641.14	
16,996.96	Anonymous Gift (1902),	11,018.16	
5,000.00	Thomas G. Appleton (1884), .	5,000.00	
2,500.00	J Ingersoll Bowditch (1889), .	2,500.00	
200,000.00	Uriah A. Boyden (1887), . . .	200,000.00	
	Draper Memorial (balance), . .	248.26	
2,000.00	Charlotte Harris (1877),	2,000.00	
45,000.00	Haven (1898),	45,000.00	
21,000.00	James Hayward (1866),	21,000.00	
50,000.00	Observatory Endowment 1882), . .	50,000.00	
50,000.00	Paine Professorship (1886) . .	50,000.00	
273,557.86	Robert Treat Paine (1886), . .	273,932.07	
110,293.88	Edward B. Phillips (1849), . .	110,293.88	
12,275.36	Josiah Quincy 1866),	12,849.83	
36,521.60	David Sears (1845),	37,376.21	
13,880.00	Augustus Story (1871),	13,380.00	
300.00	Gift for publishing lunar photographs,	132.96	905,730.34

BUSSEY INSTITUTION FUNDS.

26,841.11	Bussey Institution (balance), . . .	\$27,759.48	
10,079.85	Woodland Hill (1895),	22,607.97	50,367.45

ARNOLD ARBORETUM FUNDS.

116,555.00	Arnold Arboretum (1899),	\$123,030.00	
159,329.27	James Arnold 1872),	159,702.10	
14,761.12	Arboretum Construction Gifts (bal.),	14,349.48	
22,110.30	William L. Bradley (1897), . .	22,703.59	319,785.17
\$11,318,706.69	. . Amounts carried forward,	\$12,761,534.59	

Principal, Aug. 1, 1902.		Principal, July 31, 1903.
\$11,318,706.69	Amounts brought forward,	\$12,761,534.59

OTHER FUNDS FOR SPECIAL PURPOSES.

PHILLIPS BROOKS HOUSE.

10,506.66	Phillips Brooks House Endowment (1901),	\$10,506.66
10,596.32	Ralph H. Shepard (1900), . . .	10,969.65
5,897.78	Ralph H. Shepard Memorial (1898), .	6,178.81
5,402.14	John W. and Belinda L. Randall (1897),	5,554.95

WILLIAM HAYES FOGG ART MUSEUM.

642.90	Fogg Art Museum (balance), . . .	222.39
50,000.00	William Hayes Fogg (1892), .	50,000.00
17,054.32	Gray Fund for Engravings (1858),	16,458.39
16,178.98	William M. Prichard (1898), .	16,738.33
32,860.02	John Witt Randall (1892), . . .	33,264.40

STILLMAN INFIRMARY.

9,857.70	Stillman Infirmary (balance), . .	7,715.17
	Robert Charles Billings, for Stillman Infirmary (1903), . .	50,000.00
5,328.63	Free Bed Fund of the Class of 1868 (1898),	5,328.63
539.38	Free Bed Fund for Stillman Infirmary (1900),	539.38
	Herbert Schurz Memorial Free Bed (1903),	3,000.00
2,645.64	Henry P. Walcott (1901), . . .	2,645.64

CLASS FUNDS.

1,257.50	Fund of the Class of 1834 (1887),	1,309.53
7,366.43	" " " 1844 (1896),	7,666.96
3,725.00	" " " 1853 (1887),	3,725.00

CONSTRUCTION GIFTS.

5,148.78	Gifts for Additions to The Soldier's Field (1898),	
59,682.18	Gifts for Improvements and Additions to The Soldier's Field (1901), . .	48,319.56
421.74	Brighton Marsh Fence (balance), . .	421.74
2,117.58	Emerson Hall, " . .	117,013.40
8,421.91	Semitic Building, " . .	1,456.01
3,032.00	John Simpkins Hall, " . .	2,458.24
	Stillman Infirmary (Contagious Ward),	50,000.00
	Gift for new University Library Building,	10,000.00
3,438.44	University Museum Building (balance),	3,222.68
\$11,580,828.67	Amounts carried forward, . .	\$464,610.52 \$12,761,534.59

<u>Principal, Aug. 1, 1902.</u>		<u>Principal, July 31, 1903.</u>
\$11,580,828.67	. . Amounts brought forward, . .	\$464,610.52 \$12,761,534.59

SUNDRY FUNDS.

475,917.18	Edward Austin (1899),	480,556.21	
50,000.00	Bright Legacy (1880),	50,000.00	
30,851.79	Bursar's Sundry Accounts (balance),	27,910.96	
392,710.18	Bussey Trust (1861),	392,710.18	
159,099.72	Calvin and Lucy Ellis Aid (1899),	161,035.05	
3,171.50	John Foster (1840),	3,171.50	
488,748.07	Gains and Losses for General Invest- ments (1891),	584,450.18	
788,865.31	Price Greenleaf (1887),	788,865.31	
29,939.33	Henry Harris (1883),	29,939.33	
1,320.26	Harvard Memorial Society (1898),	1,261.78	
49,634.76	Robert Troup Paine (1880), . .	51,059.99	
42,000.00	James Savage (1873),	42,000.00	
526.63	Gifts for Cuban Teachers,	377.96	
	Sundry balances,	2,494.00	3,080,442.97

**FUNDS IN TRUST FOR PURPOSES NOT
CONNECTED WITH THE COLLEGE.**

16,643.61	Daniel Williams (1716),	\$16,642.59	
4,794.84	Sarah Winslow (1790),	4,901.55	21,544.14
<u>\$14,114,541.85</u>			<u>\$15,868,521.70</u>

Changes in the Funds during the year ending July 31, 1903.

Total amount of Funds and balances, July 31, 1903,	
as before stated,	\$15,863,521.70
Total amount of Funds and balances, August 1, 1902,	
as before stated,	14,114,541.85
Showing a total increase during the year of	<u>\$1,748,979.85</u>

Which is made up as follows:—

Gifts forming new Funds or increasing old ones, .	\$1,840,876.28	
Increase of Funds established during the year, . .	8,177.78	
Credit balances created,	25,612.17	
Gain from change of investments,	98,912.67	
Increase more than decrease of Funds (excluding the Insurance and Guaranty Fund) and balances, which appear both at the beginning and the end of the year,	330,223.66	
	<u>\$1,803,802.56</u>	
Deduct from this amount		
Sundry balances used up,	\$13,840.36	
Loss from change of investments, . .	553.14	
Decrease of Funds established during the year,	26.14	
Decrease of Insurance and Guaranty Fund, by excess of expenditures over income, in University, College, and Library accounts,	40,403.07	54,822.71
		<u>\$1,748,979.85</u>

Net increase of Funds and balances as above, . . .	\$462,926.28
Less decrease as above,	<u>54,822.71</u>

Leaving amount of the net increase of the Funds and balances, excluding gifts for capital ac- count,	<u>\$408,103.57</u>
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The following tables are not found, in their present form, in the Treasurer's books. They are intended to exhibit with some detail the resources and the expenditures of each department of the University. Gifts for capital account, gifts for immediate use and the income of every Fund held by the University are given in these tables, and also the sum paid out for the specific object of each and every Fund, in case that sum be either less or more than the actual income of the Fund. If the object to which the income of a Fund is to be applied be general one, — like salaries, for example, — no separate mention is made in these tables of that appropriation. That particular payment is merged with others of the same kind under the general heading. A balanced summary of these tables will be found on page 106.

TABLE NO. I.
THE UNIVERSITY.
RECEIPTS.

Gifts for capital account.

Robert Charles Billings Fund, Stillman	
Infirmary,	\$50,000.00
Robert Henry Eddy Fund (additional), . . .	287.00
Henry L. Pierce Residuary Bequest " . . .	45,000.00
Mary R. Searle Fund,	1,928.75
Herbert Schurz Memorial Free Bed Fund, . .	3,000.00
	<hr/> \$100,215.75

Income of the following Funds: —

Andrew Bigelow,	\$231.66	
Stanton Blake,	234.00	
Charlotte F. Blanchard,	223.28	
Samuel D. Bradford,	245.70	
John W. Carter,	585.00	
Thomas Cotton,	7.25	
John Cowdin,	1,699.82	
George B. Dorr,	5,044.83	
George Draper,	2,216.34	
Robert H. Eddy,	2,650.89	
Harvard Ellis,	4,737.33	
J. D. W. French,	249.07	
Gore,	962.72	
John C. Gray,	1,087.56	
Henry Harris ($\frac{1}{2}$ income),	700.57	
Walter Hastings,	1,123.48	
George Baxter Hyde,	234.00	
Insurance and Guaranty,	5,754.86	
Leonard Jarvis,	789.61	
Henry P. Kidder,	468.00	
	<hr/>	
Amounts carried forward,	\$29,245.97	\$100,215.75

TABLE NO. I, THE UNIVERSITY, CONTINUED.

RECEIPTS.

Amounts brought forward,		\$29,245.97	\$100,215.75
Income of the following Funds (<i>continued</i>):—			
Joseph Lee,	435.02		
Theodore Lyman,	468.00		
Israel Munson,	787.10		
Francis E. Parker,	4,951.84		
William Perkins,	1,404.00		
Henry L. Pierce Residuary (part),	886.18		
President's,	2,979.85		
Retiring Allowance,	17,052.00		
John L. Russell,	1,093.72		
Isaac Sweetser,	2,195.53		
Seth Turner,	234.00		
Henry Villard,	2,340.00		
William F. Weld,	4,350.24	68,322.95	
<hr/>			
Balance remaining after dividing the net income among the Funds,	\$214.41		
Care of the Sarah Winslow Fund,	5.61		
Sale of catalogues, calendars, directories, &c.,	980.99		
“ sand,	384.25		
“ flagging,	284.59		
Use of houses by College officers,	1,500.00		
Revenue check stamps redeemed,	12.20		
Use of land by Harvard Union,	1,360.00	4,742.05	
<hr/>			
William Hayes Fogg Art Museum.			
Income of Funds.			
William Hayes Fogg Art Museum, balance,	\$30.09		
William Hayes Fogg,	2,340.00		
Gray Fund for Engravings,	798.18		
William M. Prichard,	757.17		
John Witt Randall,	1,537.85		
Mary R. Searle,	87.53		
	\$5,550.77		
Gift for case,	85.00		
Sale of photographs and catalogue,	15.91	5,651.68	
<hr/>			
Semitic Museum.			
Income of Gifts for Semitic Collection,		572.99	
<hr/>			
Phillips Brooks House.			
Income of Funds.			
Phillips Brooks House Endowment,	\$491.73		
Ralph H. Shepard,	495.89		
Ralph Hamilton Shepard Memorial,	276.08	1,263.65	
<hr/>			
Amount carried forward,	\$180,769.07		

TABLE NO. I, THE UNIVERSITY, CONTINUED.

RECEIPTS.

Amount brought forward, \$180,769.07

Stillman Infirmary.

Income of Funds.

Samuel Ward (part),	\$726.57	
Free Bed Fund of the Class of 1888 ,	249.40	
Stillman Infirmary ,	343.51	
Free Bed Fund for Stillman Infirmary ,	25.23	
Herbert Schurz Memorial Free Bed ,	52.65	
Henry P. Walcott ,	123.83	
Robert Charles Billings ,	585.00	
	<u>\$2,106.19</u>	
Receipts from Students,	4,500.76	6,606.95
		<u><u>\$187,376.02</u></u>

PAYMENTS.

Overseers' Expenses.

Printing President's Annual Report,	\$1,104.72	
" Treasurer's " "	321.40	
" other reports, ballots, etc.,	82.04	
" Rules and By-Laws,	84.47	
Advertising,	208.50	
Auditing Treasurer's accounts,	150.00	
Other expenses,	34.61	\$1,985.74

Office Expenses.

President's,

Clerical services,	\$698.69	
Other expenses,	807.01	\$1,505.70

Treasurer's,

Clerical services,	\$1,200.75	
Rent of safes,	775.00	
Other expenses,	1,123.53	3,099.28

Bursar's,

Clerical services,	\$3,676.80	
Other expenses,	1,344.97	5,021.77

Publication Agent's,

Clerical and other services,	\$1,505.91	
Other expenses,	1,546.91	3,052.82

Inspector of Grounds and Buildings',

Clerical and other services,	\$770.00	
Other expenses,	273.79	1,043.79

Janitor's, 46.13

Corporation Rooms (fuel, rent, &c.), 2,664.56 16,434.05

Amount carried forward, \$18,419.79

TABLE NO. I, THE UNIVERSITY, CONTINUED.

PAYMENTS.

Amount brought forward,		\$18,419.79	
Salaries.			
President,			
From the University,	\$6,000.00		
" President's Fund,	3,052.99		
" Thomas Cotton Fund,	7.44	\$9,060.43	
Treasurer,		6,000.00	
Comptroller,		5,000.00	
Bursar,		4,000.00	
Assistant Bursar,		2,000.00	
Secretary to the President,		2,500.00	
Secretary of the Board of Overseers,		200.00	
Commencement Marshal,		100.00	
Chairman of the Appointment Committee,		2,000.00	
Publication Agent,		2,500.00	
Inspector of Grounds and Buildings,		2,000.00	
Clerks, Treasurer's office,		3,800.00	
Bursar's Assistant,		1,800.00	40,960.43
Retiring Allowances,			14,994.38
Memorial Hall and Sanders Theatre.			
Repairs,		\$124.79	
Insurance,		522.70	
Fuel, lighting, furniture, cleaning, &c.,		392.18	
Part of cost of moving Brimmer window,		1,000.00	2,089.67
General Expenses.			
Repairs and improvements,		\$1,852.08	
Labor,		5,522.16	
Commencement Day expenses,		812.65	
Annual Catalogue,		2,457.99	
Calendar,		204.30	
Guide Book,		472.15	
Insurance,		37.50	
Watchmen,		2,497.64	
Freight, supplies, and sundries,		559.92	
Legal services and expenses,		60.60	
Buffalo and Paris Exposition expenses,		3.79	
Watering streets and driveways,		342.29	
Plank walks,		431.57	
Mercantile agency,		775.00	
Plans,		290.00	
Driveways and gravel walks,		810.43	
Receptions,		134.40	
Cleaning portraits,		45.00	
Amounts carried forward,	\$17,309.42	\$76,414.17	

TABLE NO. I, THE UNIVERSITY, CONTINUED.

PAYMENTS.

Amounts brought forward,	\$17,309.42	\$76,414.17
Taxes on Harvard Union,	\$4,666.50	
Less repaid by Harvard Union,	\$4,209.00	
Less repaid by City of Cambridge,	457.50	4,666.50
Fence painting, construction, and repairs,		845.76
Installation of Telephone exchange,		1,957.49
Telephone tolls and rentals,		57.00
National Education Association expenses.		
Guides,	\$492.10	
Receptions,	879.46	1,371.56
Conference, Association of American Universities, .		40.00
Payments made from University income on the following accounts :—		
Phillips Brooks House,		1,846.96
William Hayes Fogg Art Museum,		3,468.31
Semitic Museum. Curator,	\$500.00	
Expenses,	2,016.15	2,516.15
Germanic Museum.		
Alterations in Rogers Building,	\$1,565.00	
Expenses,	817.06	2,382.06
Stillman Infirmary,		3,842.42
School of Veterinary Medicine.		
Tuition fees of students at other schools, \$340.00		
Interest on debt,	705.75	
Sundries, . . . . .	.95	
Balance of debt paid,	10,114.90	11,161.60
		46,298.73
William Hayes Fogg Art Museum.		
Payments of \$3,468.31, made from University income as above stated, and payments from the income of Funds as follows :—		
William Hayes Fogg, Director,	\$500.00	
Collections and expenses,	1,840.00	\$2,340.00
Gray Fund for Engravings, Curator,	\$250.00	
Collections,	995.00	
Expenses,	149.06	1,394.06
William M. Prichard, collections,		197.82
John Witt Randall, Curator,	\$250.00	
Collections,	211.70	
Expenses,	671.77	1,133.47
Mary R. Searle, books,		37.17
Case, from gift,		85.00
From balance and sundry receipts,	466.51	5,654.03
Amount carried forward,		\$128,366.93

TABLE NO. 1, THE UNIVERSITY, CONTINUED.

PAYMENTS.

Amount brought forward,	\$128,366.93	
Semitic Museum.		
Payments of \$2,516.15, made from University income, as above stated, and payments from gifts for Semitic Collection, amounting to		4,564.74
Phillips Brooks House.		
Payments of \$1,846.96, made from University income as above stated, and payments for furniture, receptions, &c., from the income of Funds as follows:—		
Phillips Brooks House Endowment,	\$491.73	
Ralph H. Shepard,	122.56	614.29
Stillman Infirmary.		
Payments of \$3,342.42 made from University income as above stated, and payments from the income of Funds, as follows:—		
Stillman Infirmary,	\$343.51	
Robert Charles Billings,	585.00	
Free Bed Fund of the Class of 1868,	249.40	
" " for Stillman Infirmary, . . .	25.23	
Herbert Schurz Memorial Free Bed,	52.65	
Henry P. Walcott,	123.83	
Samuel Ward,	2,675.81	
	\$4,055.43	
From receipts from students,	4,500.76	8,556.19
		\$142,102.15

TABLE NO. II.

THE COLLEGE.

RECEIPTS.

Gifts for Capital Account.	
Rebecca C. Ames Fund,	\$50,000.00
Robert Charles Billings Fund (Gray Herbarium),	15,000.00
George W. Dillaway Fellowship Fund,	5,000.00
Eaton Professorship Fund,	100,553.18
Godkin Lecture Fund,	12,050.00
Charles Haven Goodwin Scholarship Fund (additional),	500.00
Bertram Kimball Fund,	25,000.00
Markoe Scholarship Fund,	5,000.00
George Foster Peabody Scholarship Fund, . .	4,800.00
Professorship of Hygiene Fund (additional), . . .	20,968.66
Amount carried forward,	\$238,871.84

TABLE NO. II, THE COLLEGE, CONTINUED.

RECEIPTS.

Amount brought forward,	\$238,871.84	
Gift for Capital Account (<i>continued</i>).		
Nelson Robinson Jr. Fund (additional), . . .	200,000.00	
Dunlap Smith Scholarship Fund,	4,700.00	
Henry W. Wales Fund,	40,000.00	
David Ames Wells Fund (additional), . . .	6,490.15	
Mary L. Whitney Scholarship Fund,	7,798.63	\$497,860.62
Income of Funds for Instruction, and Gifts for Salaries.		
Alford Professorship,	\$1,298.65	
John B. Barringer,	1,436.15	
Boylston Professorship,	1,326.17	
Class Subscription,	7,040.83	
Paul Dudley,	159.17	
Eaton Professorship,	861.41	
Eliot Professorship,	1,011.77	
Eliot " (Jon. Phillips' Gift), . .	350.00	
Calvin and Lucy Ellis Aid (part),	3,896.22	
Erving Professorship,	163.80	
Fisher "	1,684.38	
Henry Flynt,	18.44	
Fund for Permanent Tutors,	760.03	
Godkin Lecture,	179.57	
Gospel Church ($\frac{1}{2}$ income),	147.98	
Asa Gray Professorship,	1,003.90	
Gurney (part),	8,127.87	
Hersey Professorship ($\frac{1}{2}$ income),	567.69	
Hollis " (Divinity),	1,615.44	
Hollis " (Mathematics),	175.36	
Ingersoll Lecture (part),	265.59	
Abbott Lawrence,	2,879.88	
James Lawrence,	2,357.55	
Lectures on Political Economy,	471.27	
Henry Lee Professorship,	5,015.93	
Thos. Lee, for Hersey Professorship,	1,017.61	
Thos. Lee, for Reading,	739.30	
McLean Professorship,	2,015.35	
William Belden Noble Lectures.		
Interest,	\$1,037.84	
Sales,	12.50	1,050.34
Daniel H. Peirce,	658.15	
Perkins Professorship,	982.80	
Plummer "	1,170.93	
Pope "	2,457.00	
Professorship of Engineering,	1,909.72	
Amounts carried forward,	\$54,816.25	\$497,860.62

TABLE NO. II, THE COLLEGE, CONTINUED.

RECEIPTS.

Amounts brought forward,		\$54,816.25	\$497,860.62
Income of Funds for Instruction, and Gifts for Salaries			
<i>(continued).</i>			
Professorship of Hygiene (part),	7,618.67		
Nelson Robinson Jr. (part),	7,137.48		
Arthur Rotch,	1,170.00		
Rumford Professorship,	2,642.81		
Gurdon Saltonstall,	2,831.16		
Smith Professorship,	1,082.95		
Josiah Stickney,	599.55		
Unknown Memorial (part),	2,920.06		
Wales Professorship,	257.45		
Henry C. Warren (part),	5,245.09		
Sylvester Waterhouse,	250.10		
Gifts for salaries and lectures,	\$1,600.00		
Interest on balance,	56.42	1,656.42	88,227.99
Income of Fellowship Funds, and Gifts for Fellowships.			
Edward Austin (part),	\$10,500.00		
George W. Dillaway,	48.77		
Ozias Goodwin Memorial,	522.24		
Harris,	507.17		
Indic Philology.			
Gifts,	\$800.00		
Henry C. Warren Fund (part)	250.00	1,050.00	
John Thornton Kirkland,	511.48		
Henry Lee Memorial,	540.12		
Charles Eliot Norton,	600.00		
Robert Treat Paine,	592.30		
John Parker,	2,645.79		
Rogers,	1,495.68		
Henry Bromfield Rogers Memorial,	533.00		
South End House (gifts),	220.00		
John Tyndall,	552.57		
James Walker,	533.52		
Whiting,	1,059.79	21,912.38	
Income of Scholarship Funds, and Gifts for Scholarships.			
Abbot,	\$174.33		
Alford (accumulating),	88.45		
Austin (part), Architecture,	600.00		
Austin (part) for Teachers,	2,166.66		
Bartlett,	251.64		
Bassett,	266.90		
Bigelow,	606.53		
Samuel A. Borden (accumulating),	102.96		
Amounts carried forward,		\$4,257.47	\$608,000.29

TABLE NO. II, THE COLLEGE, CONTINUED.

RECEIPTS.

Amounts brought forward,	\$4,257.47	\$608,000.99
Income of Scholarship Funds, and Gifts for Scholarships (continued).		
Bowditch,	5,287.70	
Bright,	1,294.86	
Browne,	177.04	
Morey Willard Buckminster,	241.63	
Burr,	1,537.10	
Ruluff Sterling Choate,	285.90	
Class of 1802,	888.86	
" 1814,	147.98	
" 1815 (Kirkland),	302.84	
" 1817,	213.22	
" 1828,	162.63	
" 1835,	227.31	
" 1841,	240.27	
" 1852 (Dana),	240.22	
" 1856,	735.87	
" 1867,	218.56	
" 1877,	235.40	
" 1883,	250.00	
Crowninshield,	554.72	
Warren H. Cudworth (gift),	600.00	
Francis H. Cummings,	253.89	
George and Martha Derby,	258.85	
Julius Dexter,	232.60	
Orlando W. Doe,	129.03	
William Samuel Eliot,	256.46	
Joseph Eveleth (part),	1,368.61	
Fall River,	99.50	
Farrar,	294.79	
Richard Augustine Gambrill,	527.95	
Charles Haven Goodwin,	337.24	
Benjamin D. Greene,	196.19	
Price Greenleaf,	3,000.00	
John Appleton Haven,	468.94	
William Hilton (part),	474.76	
Ebenezer Rockwood Hoar,	495.52	
Levina Hoar, for the town of Lincoln,	292.41	
Hodges (part),	276.35	
Hollis,	288.29	
Henry B. Humphrey,	503.10	
Hennen Jennings,	496.60	
C. L. Jones,	1,415.23	
Lawrence Scientific School Association (gift),	300.00	
Amounts carried forward,	\$29,555.89	\$608,000.99

TABLE NO. II, THE COLLEGE, CONTINUED.

RECEIPTS.

Amounts brought forward,	\$29,555.89	\$608,000.99
Income of Scholarship Funds, and Gifts for Scholarships		
<i>(continued).</i>		
George Emerson Lowell,	483.16	
Markoe,	117.00	
Matthews ($\frac{1}{4}$ net rents of Hall),	5,293.86	
William Merrick,	283.09	
Morey,	384.04	
Lady Mowlson,	268.21	
Howard Gardner Nichols,	259.79	
Lucy Osgood (accumulating),	245.79	
George Foster Peabody,	150.00	
Pennoyer,	191.15	
Perkins,	199.09	
Wendell Phillips,	69.78	
Ricardo Prize (gift),	350.00	
Rodger,	56.39	
Henry Bromfield Rogers,	160.34	
Edward Russell,	264.14	
Sales,	257.96	
Saltonstall,	518.23	
Leverett Saltonstall,	393.40	
Mary Saltonstall,	323.90	
Savage,	300.00	
Sever,	151.63	
Sewall,	508.81	
Shattuck,	2,285.66	
Slade,	284.50	
Story,	207.84	
Stoughton,	67.16	
Summer School in Geology (gifts),	475.00	
Swift,	107.08	
Thayer,	3,638.33	
Gorham Thomas,	194.73	
Toppan,	354.96	
Townsend,	1,187.33	
Walcott,	219.73	
Christopher M. Weld,	487.94	
Jacob Wendell,	246.73	
Whiting,	538.01	
Mary L. Whitney,	92.73	
Anonymous Gift for Scholarship use,	100.00	51,273.37
Amounts carried forward,		\$639,274.36

TABLE NO. II, THE COLLEGE, CONTINUED.

RECEIPTS.

Amount brought forward,	\$659,274.26	
Income of Beneficiary and Loan Funds, and Repayments.		
Rebecca C. Ames,	\$682.48	
Nathaniel Appleton,	24.57	
Edward Austin (part),	2,167.22	
Edward Austin Loans (L. S. S.), repayments, .	656.97	
Frank Bolles Memorial,	78.90	
William Brattle,	67.35	
Thomas Danforth,	48.85	
Moses Day,	255.01	
Calvin and Lucy Ellis Aid (part),	2,455.00	
John Ellery,	17.55	
Exhibitions,	62.38	
Thomas Fitch,	32.90	
Ephraim Flynt,	18.91	
Henry Flynt,	6.55	
Henry Gibbs,	19.66	
John Glover,	130.24	
Price Greenleaf Aid (balance).		
Interest,	\$16,590.77	
Repayment,	50.00	16,640.77
Edward Holyoke,	15.77	
Robert Keayne,	104.18	
Bertram Kimball,	195.02	
Lawrence Scientific School Loans, repayments, .	770.77	
Mary Lindall,	48.10	
Susan B. Lyman,	255.58	
Anne Mills,	9.22	
Munroe,	508.02	
Palfrey Exhibition,	93.97	
Dr. Andrew P. Peabody Memorial.		
Interest,	\$206.29	
Repayment,	28.00	234.29
Scholarship and Beneficiary Money Returned.		
Loans and Scholarships repaid,	968.00	
Joseph Sewall,	8.75	
Alexander W. Thayer (part),	191.53	
Quincy Tufts,	522.05	
Benjamin Wadsworth,	11.84	
Samuel Ward (part),	90.00	
Stuart Wadsworth Wheeler.		
Interest,	\$248.27	
Loan repaid,	54.00	302.27
Amount carried forward,		\$686,958.93

TABLE NO. II, THE COLLEGE, CONTINUED.

RECEIPTS.

Amount brought forward,		\$686,958.93	
Income of Prize Funds, and gifts for prizes.			
James Gordon Bennett,	\$66.74		
Bowdoin Prizes for Dissertations,	1,376.62		
Boylston Prizes for Elocution,	168.11		
Coolidge Debating,	243.13		
Dante (gift),	100.00		
Edward Hopkins Gift for "Deturs."			
From Trustees,	\$200.73		
Interest on unexpended balance,	88.87	289.60	
Sales,	49.89		
John O. Sargent,	122.76		
George B. Sohler (part),	250.00		
Charles Sumner,	151.31		
Robert N. Toppan,	172.08		
Philip Washburn,	99.03		
David Ames Wells,	4,515.21	7,604.48	
Income of Funds for General Purposes.			
J. W. P. Abbot (accumulating),	\$418.63		
John A. Blanchard,	49.14		
Jonathan Phillips,	1,474.20		
Charles L. Hancock (part),	4,290.68	6,232.65	
Income of Sundry Funds for Special Purposes.			
Botanic Department, $\frac{1}{2}$ for Cryptogamic Herbarium,	\$465.43		
" " $\frac{1}{2}$ for Laboratories of Botany,	232.71		
Francis James Child Memorial,			
Classical Publication Fund of the Class of 1856 ,			
Interest,	\$332.51		
Sales,	93.08	425.59	
T. Jefferson Coolidge, for Research in Physics,	2,500.00		
George A. Gardner,	261.75		
Harvard Oriental Series,	707.80		
Joseph Lovering, for Physical Research,	391.68		
Nelson Robinson Jr. (part),	8,283.09		
George W. Sawin,	204.28		
Barthold Schlesinger,	5.17		
John E. Thayer,	762.65		
Elizabeth Torrey,	54.99		
Henry Warren Torrey. Interest,	\$495.61		
Sales,	123.37		
Gift,	39.52	658.50	
Unknown Memorial (part),	1,800.00		
Cyrus M. Warren,	317.30		
Henry C. Warren (part),	192.37		
Chauncey Wright,	45.30	17,830.24	
Amount carried forward,		\$718,626.30	

TABLE NO. II, THE COLLEGE, CONTINUED.

RECEIPTS.

Amount brought forward,		\$718,626.30	
Appleton Chapel.			
Income of Fund for Religious Services,	\$48.39		
“ Increase Sumner Wheeler Fund,	2,340.00	2,388.39	
Jefferson Physical Laboratory.			
Interest on unexpended balance,	\$157.80		
Income of Endowment,	3,510.00	3,667.80	
Botanic Garden and Botanic Museum.			
Income of Botanic Department Fund (§ income), . .	\$1,163.56		
“ Lowell Fund,	3,107.84		
“ John L. Russell Fund (part),	23.40		
“ Gifts for Cases,	32.15		
Use of house,	700.00		
Gifts for present use,	1,300.00		
Sale of botanical material,	500.00	6,826.95	
Gray Herbarium.			
Income of balance,	\$110.44		
“ Robert C. Billings Fund,	175.50		
“ Asa Gray Memorial Fund,	1,521.51		
“ Herbarium Fund,	966.70		
“ John L. Russell Fund (part),	70.20		
Asa Gray's copyrights,	823.90		
Sale of publications,	223.55		
“ check lists,	1.49		
“ covers and odd plates,	6.50		
Commission on sales of Sullivant's Icones,	16.75		
Gifts for present use,	7,560.00	11,476.54	
Sundry Gifts.			
For Department of Architecture.			
Gifts,	\$5,000.00		
Interest,	54.27	\$5,054.27	
For Department of The Classics, sales of publica-			
tions,		189.36	
“ “ “ Engineering. Gift, . \$3,000.00			
Interest,	43.30	3,043.30	
“ “ “ French,		24.08	
“ “ “ “ for lantern slides,		27.40	
“ “ “ Mathematics, for “Transactions,”		200.00	
“ “ “ Physics. Gift, \$100.00			
Interest,	10.20	110.20	
Amounts carried forward,	\$8,648.58	\$742,985.98	

TABLE NO. II, THE COLLEGE, CONTINUED.

RECEIPTS.

Amounts brought forward,		\$8,648.58	\$742,985.98
Sundry Gifts (continued).			
For Department of Political Economy, maps and charts.			
	Gift,	\$500.00	
	Interest,	2.71	502.71
<hr/>			
" " " Sanskrit.			
	Interest,	\$25 85	
	Sales of publications,	76.13	101.48
<hr/>			
"	Sugar-cane investigations. Interest,		25.98
"	Semitic Library, interest,		21.41
"	Plantations in the College Yard.		
	Gift,	\$5,000.00	
	Interest,	56.48	5,056.48
<hr/>			
"	Ethics of the Social Questions.		
	Gift,	\$2,500.00	
	Interest,	11.78	2,511.78
<hr/>			
"	Bermuda Biological Station.		
	Gifts,	\$1,000.00	
	Interest,	2.04	1,002.04
<hr/>			
"	Research in Experimental Phonetics,	125.00	17,995.46
<hr/>			
Receipts from Students.			
	Tuition fees, regular courses,	\$432,196.97	
	" " Summer Schools,	29,691.17	
Examination fees.			
	Admission,	\$4,735.00	
	Condition,	420.00	
	Degree of Ph.D.,	30.00	5,185.00
<hr/>			
	Graduation fees,		8,280.00
Laboratory fees.			
	Botany,	\$1,125.00	
	Chemistry,	13,575.74	
	Engineering,	2,236.00	
	Geology,	1,110.00	
	Hygiene,	1,390.00	
	Mineralogy,	510.00	
	Mining and Metallurgy,	2,189.93	
	Philosophy,	162.50	
	Physics,	4,995.00	
	Zoölogy,	890.00	28,184.17
<hr/>			
Amounts carried forward,		\$503,537.31	\$760,981.44

TABLE NO. II, THE COLLEGE, CONTINUED.

RECEIPTS.

Amounts brought forward,	\$508,537.31	\$760,981.44
Receipts from Students (<i>continued</i>).		
Hemenway Gymnasium, use of lockers,	3,707.50	
College dormitories,	\$104,320.00	
Less the following items:—		
Receipts from dormitories		
belonging to University		
Houses and Lands ac-		
count,	\$21,920.00	
One-half net income from		
Matthews Hall, credited		
under income of Scholar-		
ship Funds, &c.,	5,298.86	27,218.86
Summer Camp, Engineering,	6,518.04	590,868.99
Sundries.		
Use of rooms by College Society,	\$1,260.00	
“ Hemenway Gymnasium by graduates and		
others,	78.88	
Sale of tickets to Commencement Dinner,	588.00	
“ hymn books,	47.24	
“ Annals of Mathematics,	349.57	
“ other publications,	1,608.56	
“ old examination papers,	387.92	
“ sundries,	5.00	
Repayment for books bought in 1901-02,	5.01	4,325.18
		<u>\$1,356,175.61</u>

PAYMENTS.

From Fellowship Funds and Gifts.		
Edward Austin ,	\$2,000.00	
Austin , Teaching,	8,500.00	
Ozias Goodwin Memorial ,	450.00	
Harris ,	500.00	
Indic Philology,	750.00	
John Thornton Kirkland ,	450.00	
Henry Lee Memorial ,	450.00	
Charles Eliot Norton ,	300.00	
Robert Treat Paine ,	500.00	
John Parker ,	2,100.00	
Rogers ,	725.00	
Henry Bromfield Rogers Memorial ,	450.00	
South End House,	400.00	
James Walker ,	500.00	
Whiting ,	900.00	\$18,975.00
Amount carried forward,		\$18,975.00

TABLE NO. II, THE COLLEGE, CONTINUED.

PAYMENTS.

Amount brought forward,	\$18,975.00
From Scholarship Funds and Gifts.	
Abbot,	\$100.00
American School of Classical Studies (part), . . .	25.00
Austin, Architecture,	600.00
Austin, for Teachers,	2,166.66
Bartlett,	250.00
Bassett,	270.00
Bigelow,	500.00
Bowditch,	4,699.98
Bright,	1,066.66
Browne,	100.00
Morey Willard Buckminster,	200.00
Burr,	1,200.00
Ruluff Sterling Choate,	275.00
Class of 1802,	425.00
Class of 1814,	125.00
" 1815 (Kirkland),	250.00
" 1817,	225.00
" 1828,	150.00
" 1835,	175.00
" 1841,	266.66
" 1852 (Dana),	266.66
" 1856,	500.00
" 1867,	175.00
" 1877,	200.00
" 1883,	200.00
Crowninshield,	525.00
Warren H. Cudworth,	600.00
George and Martha Derby,	250.00
Julius Dexter,	175.00
O. W. Doe,	100.00
William Samuel Eliot,	250.00
Joseph Eveleth,	866.68
Fall River,	80.00
Farrar,	333.34
Richard Augustine Gambrill,	425.00
Charles Haven Goodwin,	300.00
Benjamin D. Greene,	150.00
Price Greenleaf,	3,400.00
John Appleton Haven,	400.00
Hilton,	450.00
Ebenezer Rockwood Hoar,	333.34
Levina Hoar, for the town of Lincoln,	250.00
Hodges,	250.00
Amounts carried forward,	\$23,549.98 \$18,975.00

TABLE NO. II, THE COLLEGE, CONTINUED.

PAYMENTS.

Amounts brought forward,	\$23,549.98	\$18,975.00
From Scholarship Funds and Gifts (<i>continued</i>).		
Hollis,	225.00	
Henry B. Humphrey,	375.00	
Hennen Jennings,	400.00	
C. L. Jones,	1,200.00	
Lawrence Scientific School Association,	250.00	
George Emerson Lowell,	466.66	
Matthews,	5,400.00	
William Merrick,	225.00	
Morey,	350.00	
Lady Mowison,	225.00	
Howard Gardner Nichols,	200.00	
Rebecca A. Perkins,	150.00	
Wendell Phillips Memorial,	33.34	
Ricardo Prize,	350.00	
Rodger,	150.00	
Henry Bromfield Rogers,	100.00	
Edward Russell,	200.00	
Sales,	166.66	
Saltonstall,	483.34	
Leverett Saltonstall,	325.00	
Mary Saltonstall,	350.00	
Savage,	400.00	
Sever,	100.00	
Sewall,	466.66	
Shattuck,	1,900.00	
Slade,	333.34	
Story,	175.00	
Summer Scholarships in Geology,	475.00	
Thayer,	3,000.00	
Gorham Thomas,	150.00	
Toppan,	300.00	
Townsend,	916.67	
Walcott,	66.66	
Christopher M. Weld,	400.00	
Jacob Wendell,	200.00	
Whiting,	366.66	
University, Graduate School,	1,375.00	
" Lawrence Scientific School,	1,050.00	
Normal, " " "	550.00	
Anonymous Gift for Scholarship use,	100.00	47,499.97
Amount carried forward,		\$66,474.97

TABLE NO. II, THE COLLEGE, CONTINUED.

PAYMENTS.

Amount brought forward,		\$66,474.97
From Beneficiary and Loan Funds.		
Rebecca C. Ames,	\$279.02	
Edward Austin.		
Loans to L. S. S. students,	\$1,999.72	
" Special " 	167.50	2,167.22
Moses Day,		255.01
Calvin and Lucy Ellis Aid.		
Beneficiaries,	\$2,450.00	
Genealogical expenses,	5.00	2,455.00
Exhibitions,		62.38
Price Greenleaf Aid,		14,105.33
Edward Holyoke,		10.30
Lawrence Scientific School Loans Repaid, . . .		347.56
Munroe,		508.02
Palfrey Exhibition,		80.00
Dr. Andrew P. Peabody Memorial,		24.95
Quincy Tufts,		522.05
Stuart Wadsworth Wheeler,		300.00
Samuel Ward, special food for sick students, .		90.00
Scholarship and Beneficiary money returned, . .		2,841.56
College Appropriations for L. S. S. students, . .	1,400.00	25,448.40
From Prize Funds.		
Bowdoin Prizes for Dissertations,	\$600.00	
Boylston Prizes for Elocution,	255.00	
Coolidge Debating,	200.00	
Dante,	100.00	
Edward Hopkins Gift for "Deturs,"	234.25	
John O. Sargent,	200.00	
George B. Schier,	250.00	
Robert N. Toppan,	150.00	1,989.25
From Sundry Funds for Special Purposes.		
Francis James Child Memorial, books, . . .	\$443.35	
T. Jefferson Coolidge, research in Physics, . .	2,046.86	
Classical Publication Fund of the Class of 1856.		
Harvard Studies in Classical Philol., . .	\$29.20	
Interest on advances,	48.20	77.40
George A. Gardner, photographs, etc., for Department of Geology,		274.65
Harvard Oriental Series, publications,		765.00
Joseph Lovering, research in Physics,		790.54
George W. Sawin, books for Department of Mathematics,		144.00
Amounts carried forward,	\$4,541.80	\$93,912.63

TABLE NO. II, THE COLLEGE, CONTINUED.

PAYMENTS.

Amounts brought forward,	\$4,541.80	\$93,912.62
From Sundry Funds for Special Purposes (continued).		
Barthold Schlesinger , books for Department of German,	973.81	
John E. Thayer , Quarterly Journal of Economics,	574.81	
Elizabeth Torrey , books for Department of History,	36.35	
Henry Warren Torrey , publications,	106.46	
Unknown Memorial, services and expenses,	1,736.92	
Cyrus M. Warren , research in Chemistry,	519.04	
Chauncey Wright , books for Department of Mathematics,	24.18	
Henry C. Warren , publications,	192.87	
Nelson Robinson Jr.		
Expenses of Nelson Robinson Jr.		
Hall,	\$7,820.50	
Expenses in Department of Architecture,	418.97	
Expenses in Department of Landscape Architecture,	48.62	8,283.09
		16,988.88
Appleton Chapel.		
Preaching and morning services,	\$3,278.15	
Organist and Choir-master,	2,000.00	
Choir,	1,600.00	
Music and binding,	429.04	
Repairs and improvements,	86.84	
Fuel, gas, cleaning, &c.,	1,083.69	
Furniture,	49.00	
Repairing Organ,	23.64	8,550.86
Jefferson Physical Laboratory.		
Repairs and improvements,	\$739.05	
Insurance,	90.00	
Laboratory expenses,	5,217.50	
	\$6,046.55	
Less amounts paid by the College (included among expenses on College Public Buildings), for		
Repairs and improvements,	\$494.66	
Insurance,	90.00	
Laboratory expenses,	600.00	1,184.66
Payments from the income of the Endowment,		4,861.89
Hemenway Gymnasium.		
Salaries and wages,	\$4,545.08	
Repairs and improvements,	385.85	
Amounts carried forward,	\$4,930.93	\$124,813.20

TABLE NO. II, THE COLLEGE, CONTINUED.

PAYMENTS.

Amounts brought forward, . .	\$4,930.93	\$124,313.20
Hemenway Gymnasium (continued).		
Janitors and cleaning,	2,458.21	
Fuel,	1,331.39	
Apparatus,	700.00	
Insurance,	256.50	
Water,	208.81	
Lighting,	927.18	
Printing,	52.94	
Furniture,	39.35	
Stationery and postage,	43.66	
Telephone,	30.63	
Supplies and sundries,	81.68	\$11,061.28
Less amount received from other departments, .	1,326.44	9,734.84
Botanic Garden and Botanic Museum.		
Salaries, labor, repairs, materials, &c.,	\$8,120.06	
Interest on advances,	265.37	
Cases, from gift,	392.95	8,778.38
Gray Herbarium.		
Salaries,	\$5,050.00	
Cases,	854.00	
Collectors, expenses,	1,300.00	
Labor, repairs, materials, &c.,	4,732.36	11,936.36
Summer Schools.		
Salaries,	\$14,759.50	
Clerical services,	400.00	
Janitors and cleaning,	119.32	
Water,	16.95	
Lighting,	19.80	
Printing,	1,189.71	
Instruments and apparatus,	30.48	
Stationery and postage,	452.18	
Advertising,	636.97	
Services and wages,	471.65	
Supplies, materials, and sundries,	469.76	
Remission of fees for instruction,	150.00	
Restaurant expenses,	475.80	
Ventilation in Randall Hall (\$ cost),	148.59	19,340.71
From Special Gifts.		
For Department of Architecture, books, casts, &c.,	\$8,190.70	
“ “ Botany, sugar-cane investigation,	977.00	
“ “ The Classics, books,	296.09	
“ “ Education, books,	227.41	
Amounts carried forward,	\$9,691.20	\$174,108.49

TABLE NO. II, THE COLLEGE, CONTINUED.

PAYMENTS.

Amounts brought forward,		\$9,691.20	\$174,103.49
From Special Gifts (<i>continued</i>).			
For Department of Engineering, electrical apparatus,	1,273.00		
“ “ French, books,	29.09		
“ “ “ lantern slides,	17.40		
“ “ German, books,	20.89		
“ “ History and Government, books,	17.14		
“ “ Mathematics, subscription for			
“ “ “ Transactions,”	100.00		
“ “ Physics, research,	14.00		
“ “ “ apparatus, &c.,	1,020.18		
“ “ Political Economy, books,	9.63		
“ “ “ “ maps and charts,	60.00		
“ “ Sanskrit, publications,	1,354.61		
“ “ Zoölogy, aquarium (part),	20.00		
“ Lowell Memorial Library, books,	85.56		
“ Semitic Library, books,	118.20		
“ Social Questions Library, books,	11.78		
“ Plantations in the College Yard,	1,269.09		
“ Bermuda Biological Station,	548.23	15,660.00	
Appropriations for collections, laboratories, &c.			
Anthropology (Prof. F. W. Putnam),	\$200.00		
Botany (Prof. Thaxter),	200.00		
Chemistry (Prof. H. B. Hill),	500.00		
Engineering instruments (Prof. Hollis),	129.75		
Fine Arts and Drawing (Prof. Moore),	300.00		
French, lantern slides,	200.00		
Geology and Geography (Asst. Prof. Ward),	250.00		
“ “ for publications,	300.00		
“ “ reprints,	100.00		
“ “ assistance,	150.00		
Greek Epigraphy (Prof. H. W. Smyth),	200.00		
Volcanic specimens (Instr. Jaggard),	364.24		
Division of Mathematics,	300.00		
Mineralogy (Prof. Wolff),	500.00		
Mining and Metallurgy, Equipment (Prof. H. L. Smyth),	1,072.00		
Mining and Metallurgy, running expenses (Prof. H. L. Smyth),	250.00		
Music (Prof. Paine),	250.00		
Petrography (Prof. Wolff),	150.00		
Physics (Prof. Trowbridge),	1,000.00		
Psychology (Prof. Münsterberg),	300.00		
“ “ for publications,	400.00		
Amounts carried forward,		\$7,115.99	\$189,763.49

TABLE NO. II, THE COLLEGE, CONTINUED.

PAYMENTS.

Amounts brought forward,	\$7,115.99	\$189,763.49
Appropriations for collections, laboratories, &c. (<i>continued</i>).		
Zoölogy (Prof. Mark),	400.00	
" for publications,	500.00	
" ½ cost of certain improvements at Museum of Comparative Zoölogy,	1,079.27	
Laboratory fees appropriated,	25,948.17	
Fuel and services in Nat. Hist. Laboratories, . . .	1,500.00	
Fuel, services, &c., in Jefferson Ph. Laboratory, . .	600.00	87,143.43
Salaries.		
Instruction,	\$417,227.00	
Deans,	4,500.00	
Chairmen of Committees,	1,633.33	
Medical Visitor,	3,000.00	
Recorders and Secretaries,	5,100.00	
Examination Proctors,	1,950.00	433,410.33
For College Public Buildings which are not valued in the Treasurer's books, the expenses of which are not separately entered in this table.		
Repairs, improvements, &c.,	\$11,829.53	
Cleaning and care,	12,467.13	
Fuel,	12,181.73	
Water,	374.01	
Lighting,	1,734.03	
Insurance,	2,888.61	
Electric power,	570.00	
Supplies and sundries,	478.57	42,023.61
For College Dormitories, which are not valued in the Treasurer's books.		
Repairs and improvements,	\$4,442.71	
Cleaning and care,	13,056.93	
Fuel,	3,987.53	
Water,	836.88	
Lighting,	3,607.40	
Insurance,	528.57	
Supplies and sundries,	288.90	26,748.92
General Expenses.		
Deans and Chairmen of Committees, clerical and office expenses,	\$15,727.61	
Reading examination books,	3,386.97	
Services of proctors,	1,336.63	
" assistants to instructors,	4,377.34	
" undergraduates,	2,173.56	
Amounts carried forward	\$27,002.11	\$729,089.78

TABLE NO. II, THE COLLEGE, CONTINUED.

PAYMENTS.

Amounts brought forward,		\$27,002.11	\$729,089.78
General Expenses (<i>continued</i>).			
Services of Head Guide in College grounds,	88.05		
Attendants in department laboratories,	2,140.00		
Attendants in department libraries,	1,534.50		
Admission examinations,	3,528.53		
Pews hired in Cambridge churches,	1,831.50		
Commencement Dinner,	543.42		
Printing office, expenses,	\$23,324.63		
Less receipts,	<u>13,356.66</u>	9,967.97	
Printing,	9.50		
Printing reports of Mining Club,	185.50		
Books, . . . . .	.46		
Annals of Mathematics,	1,050.97		
Handbook of American History,	351.48		
Telephones,	95.41		
Furniture,	4,727.71		
Advertising,	726.25		
Watchmen,	1,561.40		
Supplies, tools, and materials,	237.13		
Legal services,	56.88		
Music, Class-Day,	125.00		
Receptions,	356.25		
Department of Economics, equipment of head- quarters,	194.81		
Use of Grays 18 by English department,	100.00		
Services and expenses at Faculty meetings,	81.67		
" for Parietal Board,	73.25		
" " Department of Education,	12.90		
Blank books for examinations,	653.50		
Expenses of camp at Squam Lake (Engineering),	6,491.68		
Engineering courses in Pierce Hall,	7,766.83		
Travelling expenses in Mining 12,	289.30		
Travelling expenses in Economics 18,	52.30		
Expenses of Medical Visitor,	137.72		
" " delegates,	220.28		
Diplomas,	788.87		
Lighting College Yard,	547.51		
Case for model of Metropolitan District,	405.53		
Freight, and sundries,	<u>261.58</u>	74,147.75	
			\$803,237.53

TABLE NO. III,
THE LIBRARY.

RECEIPTS.

Income of Book Funds, and Gifts and Receipts for the
purchase of books.

Nathaniel I. Bowditch,	\$99.86	
Bright ($\frac{1}{4}$ income of the Bright Legacy), . . .	1,170.00	
Edwin Conant ($\frac{1}{4}$ income),	324.78	
Constantius ($\frac{1}{4}$ income),	608.23	
Denny,	248.13	
Eliza Farrar,	248.04	
Horace A. Haven,	149.20	
Francis B. Hayes,	472.04	
George Hayward,	247.85	
Thomas Hollis,	110.92	
Sidney Homer,	99.83	
Frederick A. Lane,	248.13	
Lowell,	1,229.39	
Charles Minot,	2,832.34	
Lucy Osgood,	334.39	
Mary Osgood,	328.63	
Henry L. Pierce,	4,718.10	
Francis Sales,	184.81	
Stephen Salisbury,	247.71	
Sever,	944.43	
Samuel Shapleigh,	186.26	
George B. Sohler (part),	77.60	
Subscription for Library,	501.56	
Charles Sumner,	1,760.19	
Kenneth Matheson Taylor,	238.30	
Ichabod Tucker,	210.86	
James Walker,	744.59	
Thomas W. Ward,	248.13	
Executors of Robert Waterston (balance), . .	11.61	
J Huntington Wolcott,	948.96	
Gifts for books,	8,857.61	
Sale of duplicate books,	205.41	
Received for books lost,	37.00	
Fines,	344.99	\$24,214.38

Income of R. M. Hodges Fund, for publishing
Bibliographical Contributions,

359.57

Income of Funds for general purposes.

Daniel Austin,	\$291.56	
Edwin Conant ($\frac{1}{4}$ income),	974.34	
Constantius ($\frac{1}{4}$ income),	608.24	
Amounts carried forward,	\$1,874.14	\$24,573.95

TABLE NO. III, THE LIBRARY, CONTINUED.

RECEIPTS.

Amounts brought forward,	\$1,874.14	\$24,573.95
Income of Funds for general purposes (<i>continued</i>).		
Fund of the Class of 1851 (accumulating), . .	27.38	
" " " " (C. F. Dunbar's Gift),	26.96	
Price Greenleaf ,	16,590.76	
Jarvis ,	23.40	
Henry T. Morgan ,	3,835.31	
James Savage ($\frac{1}{2}$ net income),	1,249.20	
Daniel Treadwell ,	558.09	
Eben Wright ,	4,680.00	28,865.24
Fees for use of Library,	\$120.00	
Sale of Index Subject Catalogues, . . . . .	.75	
" Bibliographical Contributions,	4.68	
" duplicate coins, &c.,	31.42	156.85
		<u>\$53,596.04</u>

PAYMENTS.

For Books, from the following Funds, Gifts, etc.	
Bowditch ,	\$89.13
Bright ,	1,202.37
Conant ,	339.49
Constantius ,	647.73
Denny ,	238.27
Farrar ,	230.75
Haven ,	129.45
Hayes ,	509.26
Hayward ,	318.21
Hollis ,	108.86
Homer ,	63.68
Lane ,	252.73
Lowell ,	927.51
Minot ,	2,874.54
Lucy Osgood ,	328.82
Mary Osgood ,	354.96
Pierce ,	5,056.88
Sales ,	182.09
Salisbury ,	227.22
Sever ,	1,035.45
Shapleigh ,	184.52
Sohier ,	73.55
Subscription Fund ,	642.00
Sumner ,	1,766.48
Taylor ,	248.79
Tucker ,	198.60
Amount carried forward,	\$18,231.34

TABLE NO. III, THE LIBRARY, CONTINUED.

PAYMENTS.

Amount brought forward,	\$18,231.34	
For Books, from the following Funds, etc. (continued).		
Walker,	783.79	
Ward,	250.43	
J. Huntington Wolcott,	1,008.00	
Gift for books on Aeronautics,	15.66	
Gifts for early editions of the Printed Bible, . . .	393.81	
Mrs. Louis Bettmann Gift,	140.93	
A. C. Coolidge Gifts,	1,101.33	
Harold J. Coolidge Gift,	63.60	
Mrs. J. R. Coolidge Gift,	8.12	
Dante Society Gift,	48.38	
John Drew Gift,	1,000.00	
Gifts for English Literature of the 17th and 18th centuries,	\$1,037.57	
Less repayment,	4.50	1,033.07
Ernest L. Gay Gift,	28.76	
Hammer Gift,	70.43	
Loeb Gift,	47.06	
Saturday Club Gift,	2.57	
John Harvey Treat Gift,	150.53	
Alain C. White Gift,	199.17	
Duplicate money and receipts for lost books, . . .	239.63	
Fines,	354.70	\$25,171.31
From R. M. Hodges Fund.		
Publication of bibliographical contributions,		150.34
Salaries,	\$15,500.00	
Services and wages,	19,362.05	
Repairs and improvements,	659.06	
Janitors and cleaning,	1,116.39	
Fuel,	1,387.16	
Water,	12.23	
Lighting,	1,726.20	
Printing,	1,663.55	
Furniture,	733.04	
Stationery and postage,	627.18	
Telephone,	140.47	
Binding,	2,289.73	
Travelling expenses,	27.00	
Electric power,	79.54	
Freight,	173.88	
Medals,	31.42	
Supplies, and sundries,	848.49	46,377.39
		<u>\$71,699.04</u>

TABLE No. IV.

DIVINITY SCHOOL.

RECEIPTS.

Income of Funds for Instruction, or for general purposes.

Divinity School (balance),	\$1,748.58	
New Endowment,	3,342.78	
Oliver Ames,	795.60	
Hannah C. Andrews,	24.57	
Daniel Austin,	41.65	
Adams Ayer,	46.80	
Joseph Baker,	368.55	
Beneficiary money returned (balance),	96.27	
Bussey Professorship,	1,758.98	
Benjamin Bussey Trust ($\frac{1}{4}$ net income),	2,949.11	
Joshua Clapp,	101.93	
Edwin Conant,	234.00	
Dexter Lectureship,	949.10	
Frothingham Professorship,	2,270.32	
Abraham W. Fuller,	49.14	
Lewis Gould,	42.64	
John Hancock Professorship,	\$281.17	
C. L. Hancock,	383.16	664.33
Haven,		234.00
Samuel Hoar,		49.14
Henry P. Kidder,		468.00
Henry Lienow,		429.86
Caroline Merriam,		49.14
Parkman Professorship,		749.55
John W. Quincy,		22.60
Abby Crocker Richmond,		46.80
John L. Russell,		46.80
William B. Spooner,		468.00
Thomas Tileston of New York Endowment,		1,872.00
Mary P. Townsend,		245.70
Winthrop Ward,		98.28
Winn Professorship,		2,543.39
		<u>\$22,802.51</u>

Income of Scholarship and Beneficiary Funds.

Abner W. Buttrick,	\$611.68	
Thomas Cary,	257.03	
George Chapman,	126.45	
Joshua Clapp,	207.28	
Jackson Foundation,	694.98	
J. Henry Kendall,	250.38	
Nancy Kendall,	160.57	
William Pomroy,	49.14	2,357.51

Amount carried forward, \$25,160.02

TABLE NO. IV, DIVINITY SCHOOL, CONTINUED.

RECEIPTS.

Amount brought forward,		\$25,160.02
Income of Book Funds.		
Rushton Dashwood Burr,	\$181.07	
Louisa J. Hall,	83.79	214.86
Receipts from Students.		
Tuition fees, regular courses,	\$5,749.54	
" " Summer School,	855.00	
Divinity Hall,	2,770.00	
Library fines,	5.95	9,380.49
Gift from Society for Promoting Theological Education,	\$749.96	
Gifts for repairs in the Chapel,	525.00	
Sale of tickets to Alumni Dinner,	47.00	
" Catalogues,	2.75	1,324.71
		<u>\$36,080.08</u>

PAYMENTS.

From Scholarship Funds.		
Thomas Cary,	\$80.00	
George Chapman,	100.00	
Joshua Clapp,	180.00	
Jackson,	586.66	
J. H. Kendall,	200.00	
Nancy Kendall,	140.00	\$1,286.66
From Beneficiary Funds.		
Abner W. Buttrick,	\$450.00	
William Pomroy,	50.40	500.40
From Louisa J. Hall Fund, books, . . . . .		.67
Salaries for instruction,	\$27,384.56	
Summer School. Salaries for instruction,	\$1,125.00	
Printing and other expenses,	385.65	1,510.65
Secretary and Librarian,	1,750.00	
Services and wages,	388.67	
Library Assistants,	1,065.00	
Repairs, improvements, and labor,	898.56	
Cleaning and care of rooms,	1,736.72	
Fuel,	1,088.27	
Water,	75.90	
Lighting,	348.63	
Printing,	115.96	
Furniture,	520.46	
Stationery and postage,	176.20	
Telephone,	36.20	
Books,	634.69	
Amounts carried forward,	\$37,730.47	\$1,787.73

TABLE NO. IV, DIVINITY SCHOOL, CONTINUED.

PAYMENTS.

Amounts brought forward,	\$37,730.47	\$1,787.73
Binding,	142.78	
Catalogues,	118.10	
Advertising,	618.86	
Diplomas and sundries,	122.25	
Alumni dinner,	68.75	
Proportion of expenses of Gymnasium,	72.49	
Tuning and repairing organ,	14.75	
American School for Oriental study and research in Palestine (3d payment),	100.00	
Inter-Seminary Mission Alliance Meeting,	110.20	
Alterations of Library building,	1,979.85	
Removing Divinity House,	267.05	41,884.55
		<u>\$43,122.28</u>

TABLE NO. V.

LAW SCHOOL.

RECEIPTS.

Gift for Capital Account.		
Hughes Loan Fund,		\$500.00
Income of Funds.		
Law School, balance,	\$9,610.90	
James Barr Ames Prize,	183.85	
Bemis Professorship,	3,081.81	
Benjamin Bussey Professorship,	1,122.26	
Benjamin Bussey Trust ($\frac{1}{4}$ net income),	2,949.10	
Nathan Dane Professorship,	787.10	
John Foster, income for Law Students every other year,	148.40	
Hughes Loan,	1.97	
Law School Book,	2,200.58	
Law School Library,	4,680.00	
Isaac Royall Professorship,	390.86	
Weld "	4,445.77	
Scholarship money returned,	62.15	29,618.25
Tuition fees,		94,778.50
Sale of Catalogue,		8.00
" books,		612.50
" portraits,		16.75
		<u><u>\$125,519.00</u></u>

TABLE NO. V, LAW SCHOOL, CONTINUED.

PAYMENTS.

James Barr Ames Prize Fund.

Engraving dies for medal,	\$400.00	
Prize,	400.00	\$800.00
Salaries for instruction,	\$44,945.83	
Librarian and Assistants,	8,991.45	
Secretary,	800.00	
Reading examination books,	301.00	
Services of proctors,	297.87	
Scholarships,	6,000.00	
Repairs and improvements,	429.68	
Janitor, cleaning, &c.,	1,411.24	
Fuel,	1,247.52	
Water,	32.36	
Lighting,	1,090.04	
Printing,	216.72	
Furniture,	582.97	
Stationery and postage,	646.21	
Books,	11,719.75	
Binding,	2,005.84	
Advertising,	110.00	
Telephone,	95.48	
Freight,	332.89	
Sundries,	324.70	
Proportion of expenses of Gymnasium,	1,253.95	
Insurance,	1,476.40	
Travelling expenses,	17.15	
Electric power,	50.00	
Catalogue,	251.33	
Diplomas,	300.16	
Expenses connected with proposed addition to Austin Hall,	6,237.50	91,168.04
		<u>\$91,968.04</u>

TABLE NO. VI.

MEDICAL SCHOOL.

RECEIPTS.

Gifts for Capital Account.

F. B. Greenough Fund (additional),		\$500.00
Income of Funds for Instruction, or for general purposes.		
Medical School, balance,	\$2,809.97	
Edward M. Barringer (part),	694.01	
John B. and Buckminster Brown,	954.72	
Amounts carried forward,	\$4,458.70	\$500.00

TABLE NO. VI, MEDICAL SCHOOL, CONTINUED.

RECEIPTS.

Amounts brought forward,	\$4,458.70	\$500.00
Income of Funds for Instruction, etc. (<i>continued</i>).		
Caroline Brewer Croft (part),	1,500.00	
Calvin and Lucy Ellis (part),	16,750.73	
George Fabyan,	4,875.40	
Samuel E. Fitz,	85.92	
Henry Harris ($\frac{1}{2}$ income),	700.57	
Hersey Professorship ($\frac{1}{2}$ income),	378.47	
George Higginson,	4,741.87	
Jackson,	1,726.97	
William O. Moseley,	2,475.72	
New subscription,	1,813.50	
Dr. Rupaner,	436.93	
George C. Shattuck,	3,020.88	
Mary W Swett,	737.80	
Samuel W. Swett,	936.00	
Quincy Tufts,	93.60	
Henry Willard Williams,	1,576.27	46,309.33
Income of Fellowship Funds.		
Edward Austin (part) Teaching,	\$2,000.00	
George Cheyne Shattuck Memorial,	249.02	
Charles Eliot Ware "	263.11	
John Ware "	247.11	2,759.24
Income of Scholarship Funds.		
Edward M. Barringer (part),	\$500.00	
Lucius F Billings,	240.83	
David Williams Cheever,	272.98	
Cotting Gift,	147.98	
Orlando W. Doe,	129.12	
Joseph Eveleth (part),	520.00	
Lewis and Harriet Hayden,	268.82	
William Hilton (part),	630.00	
C M. Jones,	295.82	
Alfred Hosmer Linder,	247.34	
Charles B. Porter	257.59	
Charles Pratt Strong,	213.31	
Isaac Sweetser,	297.04	
John Thomson Taylor,	247.25	
Edward Wigglesworth,	248.32	4,516.40
Income of Prize Funds.		
Ward Nicholas Boylston,	\$165.67	
William H. Thorndike,	304.57	470.24
Amount carried forward,	\$54,555.21	

TABLE NO. VI, MEDICAL SCHOOL, CONTINUED.

RECEIPTS.

Amount brought forward,	\$54,555.21	
Income of Sundry Funds and Gifts for special purposes.		
Edward Austin (Bacteriological Laboratory), .	\$518.36	
Edward Austin (part),	200.00	
J. Ingersoll Bowditch,	292.36	
Ward Nicholas Boylston, for Medical Books,	129.59	
Caroline Brewer Croft (part),	651.37	
George Fabyan (part),	323.00	
F. B. Greenough (surgical research),	104.93	
Surgical Laboratory,	277.01	
Warren Fund for Anatomical Museum,	672.00	
Medical Library,	78.67	
Gifts for Pathological Department Library,	31.05	
“ “ Anatomical Research,	4.80	
“ “ certain work at the Surgical Laboratory, .	13.92	
“ “ advancing the knowledge of the Pathology of the Nervous System,	9.97	3,307.03
Gifts for present use,		5,050.00
Unexpended balance of appropriation returned, . . . . .		.85
Receipts from students.		
Tuition fees, regular courses,	\$75,038.75	
“ “ graduate courses,	1,380.00	
“ “ Dental students,	5,850.00	\$82,268.75
“ “ Summer courses,	5,075.00	
Graduation fees,	3,420.00	
Matriculation fees,	415.00	
Examination fees,	468.00	
Laboratory fees.		
Chemistry,	\$1,232.38	
Embryology,	222.00	
Operative Surgery,	240.00	
Physiology,	394.07	
Practical Anatomy,	944.00	3,032.45
Use of microscopes,		1,010.45
		95,689.65
		<u>\$158,602.74</u>

PAYMENTS.

From Fellowship Funds.

Edward Austin, Teaching,	\$2,000.00	
George Cheyne Shattuck Memorial,	225.00	
Charles Eliot Ware Memorial,	225.00	
John Ware Memorial,	225.00	\$2,675.00
Amount carried forward,		\$2,675.00

TABLE NO. VI, MEDICAL SCHOOL, CONTINUED.

PAYMENTS.		
Amount brought forward,		\$2,675.00
From Scholarship Funds.		
Edward M. Barringer,	\$500.00	
Lucius F. Billings,	280.00	
David Williams Cheever,	350.00	
Cotting Gift,	175.00	
Orlando W. Doe,	100.00	
Joseph Eveleth,	520.00	
John Foster, income for Medical Students (bal.),	91.58	
Lewis and Harriet Hayden,	279.26	
William Hilton,	630.00	
C. M. Jones,	150.00	
Alfred Hosmer Linder,	200.00	
Charles B. Porter,	120.00	
Charles Pratt Strong,	100.00	
Isaac Sweetser,	250.00	
John Thomson Taylor,	280.00	
Edward Wigglesworth,	200.00	
Faculty Scholarships,	880.00	5,105.84
From Prize Funds.		
Ward Nicholas Boylston, Advertising, . . .		20.82
From Sundry Funds and Gifts for special purposes.		
Edward Austin, appropriations,	\$200.00	
“ “ (Bacteriological Laboratory), . .	332.08	
J. Ingersoll Bowditch, Physiology,	326.78	
Ward Nicholas Boylston, Medical Books, . .	335.16	
Caroline Brewer Croft (part), cancer investigations,	195.07	
George Fabyan (part), services,	323.00	
F. B. Greenough Fund, Surgical Research, . .	521.49	
Gifts for Anatomical Research,	12.00	
Gifts for Pathological Department Library,	1,063.20	
Surgical Laboratory,	1,633.63	
Warren Fund for Anatomical Museum,	589.69	
Sundry Gifts,	538.48	6,070.53
Appropriations.		
Anatomy,	\$2,750.00	
Bacteriology,	700.00	
Chemistry,	1,232.38	
Clinical Medicine,	50.00	
Clinical Surgery,	225.00	
Gynaecology,	25.00	
Histology and Embryology,	1,186.45	
Hygiene,	200.00	
Amounts carried forward,	\$6,368.83	\$13,872.19

TABLE NO. VI, MEDICAL SCHOOL, CONTINUED.

PAYMENTS.

Amounts brought forward,	\$6,368.83	\$13,872.19
Appropriations (<i>continued</i>).		
Museum,	312.00	
Obstetrics,	250.00	
Pathology,	800.00	
Pharmacology and Therapeutics,	700.00	
Physiology,	4,307.41	
Surgery,	400.00	
Theory and Practice,	150.00	
Surgical Laboratory,	312.45	13,600.69
Graduate courses, fees repaid to Instructors,	\$1,400.00	
Summer " " " "	4,400.00	5,800.00
Salaries for instruction,		102,091.66
General Expenses.		
Dean, and Secretary,	\$800.00	
Clerical services,	1,881.75	
Repairs and improvements,	2,813.82	
Janitor and cleaning,	5,425.86	
Fuel,	2,602.97	
Water,	1,315.20	
Lighting and gas,	3,125.84	
Printing,	328.95	
Furniture,	88.77	
Instruments and apparatus,	21.50	
Stationery and postage,	178.42	
Advertising and catalogues,	1,652.00	
Insurance,	863.00	
Proctors,	210.00	
Mechanics and laboratory attendants,	6,831.52	
Electric power,	1,564.49	
Sundries,	470.69	
Supplies and material,	1,964.07	
Diplomas,	116.56	
Telephone,	180.00	
Time service,	25.00	32,460.41
		\$167,824.95

TABLE NO. VI, CONTINUED.
Medical School Undertaking.

RECEIPTS.

Gifts received in 1902-03.

Robert C. Billings Fund (additional),	\$7,500.00	
George Fabyan Fund (additional),	25,000.00	
Jackson Professorship Fund (additional), . . .	12,500.00	
Proctor Fund for the Study of Chronic Diseases, .	50,000.00	
John D. Rockefeller Gift (additional), . . .	527,450.70	
Shattuck Professorship Fund (additional), . . .	12,500.00	
James Stillman Professorship Fund,	100,000.00	
David Sears Building Gift,	100,000.00	
Unrestricted Gifts,	62,250.00	\$897,200.70

Income of Funds and Gifts.

Robert C. Billings,	\$4,688.05	
George Fabyan (addition of 1903), . .	\$438.75*	
George Higginson Professorship, . .	4,741.87*	
Jackson Professorship (addition of 1902),	828.74*	
Henry L. Pierce,	16,576.56	
Proctor, for the Study of Chronic Diseases, . .	1,267.48	
John D. Rockefeller Gift,	23,961.60	
School of Comparative Medicine,	207.42	
David Sears Building Gift,	1,012.00	
Shattuck Professorship (addition of 1902),	\$802.43*	
James Stillman Professorship,	4,484.98	
Gift for Pathological Laboratory (V. S.),	232.55	
Gifts for buildings,	358.27	52,788.91
Rebate on revenue stamps on deed,	\$301.45	
Sale of old house,	100.00	401.45
		<u>\$950,391.06</u>

PAYMENTS.

From Robert C. Billings Fund, for Journal of Medical Research,		\$900.00
Real Estate, Huntington Avenue, Boston,	\$22,000.00	
Sewer assessment,	491.51	
Legal services and expenses,	103.20	
Other expenses,	74.27	22,668.98
Building Expenses.		
Architects, Engineers, and other professional charges,	36,000.00	
Interest on Advances,		18,214.31
		<u>\$77,788.29</u>

* These items of income are entered in the Medical School table.

TABLE No. VII.
DENTAL SCHOOL.

RECEIPTS.

Income of Funds and Gifts.			
Dental School, balance,	\$1,498.77		
Dental School Endowment,	105.58		
Henry C. Warren Endowment,	1,076.40		
Gifts for new building,	930.01	\$3,610.76	
Receipts from students.			
Tuition fees,	\$17,667.50		
Less transferred to Medical School,	5,850.00	\$11,817.50	
Condition examination fees,	179.00		
Laboratory fees,	1,900.97		
Use of microscopes,	99.00		
Chemistry, breakage, and supplies,	150.76	14,147.23	
Fees from infirmary,		4,683.52	
Sale of sweepings,	\$41.35		
" platinum,	111.61		
" scraps and old materials,	29.53	183.49	
		<u>\$22,624.00</u>	

PAYMENTS.

Salaries for instruction,	\$12,630.00		
Curator and Librarian,	150.00		
Secretary,	300.00		
Proctors,	135.00		
Repairs and improvements,	693.40		
Janitors and cleaning,	1,495.16		
Fuel,	525.10		
Water,	58.80		
Lighting,	454.80		
Printing,	104.43		
Furniture,	22.50		
Instruments and apparatus,	94.04		
Stationery and postage,	177.67		
Books,	36.77		
Binding,	57.80		
Advertising,	700.60		
Services and wages,	1,175.59		
Supplies, &c.,	4,282.25		
Sundries,	406.48		
Delegates' expenses,	43.35		
Diplomas,	27.00		
Catalogue,	74.10		
Telephone,	123.95		
National Association of Dental Faculties, dues,	50.00	\$23,818.79	

TABLE NO. VIII.

MUSEUM OF COMPARATIVE ZOÖLOGY.

RECEIPTS.

Income of Funds.

Museum of Comparative Zoölogy (balance), . . .	\$1,608.56	
Agassiz Memorial,	13,943.26	
Teachers and Pupils,	355.40	
Virginia Barret Gibbs Scholarship,	257.92	
Gray Fund for Zoölogical Museum,	2,340.00	
Sturgis Hooper,	5,044.71	
Humboldt,	362.28	
Willard Peele Hunnewell,	234.00	
Permanent Fund for Museum of Zoölogy,	5,497.55	
Henry L. Pierce,	4,680.00	\$34,323.68
<hr/>		
Gifts for an aquarium. Gifts,	\$1,714.36	
Interest,	10.33	1,724.69
<hr/>		
Gift for work in the Palaeozoic room,	34.48	
Use of lecture rooms by Radcliffe College,	700.00	2,459.17
<hr/>		
		<u>\$36,782.85</u>

PAYMENTS.

Paid on the order of the Faculty of the Museum of Comparative Zoölogy, from the following Funds, &c.

Balance of August 1, 1902 (part),	\$5,336.38	
Income of balance,	1,608.56	
Agassiz Memorial,	13,943.26	
Teachers and Pupils,	355.40	
Gray,	2,340.00	
Humboldt,	362.28	
William Peele Hunnewell,	234.00	
Permanent,	5,497.55	
Henry L. Pierce,	4,680.00	
Receipt for use of rooms,	700.00	\$35,057.43
<hr/>		
Virginia Barret Gibbs Scholarship,	\$250.00	
Sturgis Hooper. Salary,	\$5,000.00	
Expenses,	125.14	5,125.14
<hr/>		
Aquarium (part),	\$1,615.31	
Work in the Palaeozoic room,	34.48	1,649.79
<hr/>		
		<u>\$42,082.36</u>

TABLE No. IX.

**PEABODY MUSEUM OF AMERICAN ARCHAEOLOGY
AND ETHNOLOGY.**

RECEIPTS.

Income of Funds.

Hemenway Fellowship,	\$536.70	
Peabody Building,	1,410.57	
Peabody Collection,	2,354.67	
Peabody Professor,	2,354.67	
Thaw Fellowship,	1,148.90	
Henry C. Warren Exploration,	505.21	
Susan Cornelia Warren,	234.00	
Robert C. Winthrop Scholarship,	250.94	
Huntington Frothingham Wolcott,	983.92	\$9,779.58
Use of heating plant,		150.00
Gifts for present use,		634.00
		<u>\$10,563.58</u>

PAYMENTS.

Hemenway Fellowship,	\$425.00	
Thaw Fellowship,	1,160.24	
Robert C. Winthrop Scholarship,	200.00	\$1,785.24
Henry C. Warren Fund, explorations,		953.23
Salary of Professor and Curator,	\$2,388.41	
Services and wages,	2,276.40	
Repairs and improvements,	99.18	
Janitor and cleaning,	656.11	
Fuel,	278.43	
Water,	25.00	
Lighting,	14.80	
Printing,	46.81	
Furniture,	1,402.96	
Stationery and postage,	149.13	
Telephone,	32.27	
Books,	92.46	
Binding,	51.29	
Insurance,	10.00	
Collections,	460.50	
Freight,	234.59	
Supplies,	396.46	
Mississippi Valley exploration,	547.75	
Railroad fares,	60.00	
Sundries,	66.28	
Interest on advances,	113.93	\$9,402.76
		<u>\$12,141.23</u>

TABLE No. X.
OBSERVATORY.

RECEIPTS.

Gift for Capital Account.

Robert Treat Paine Fund (additional), \$374.21

Income of Funds and Gift.

Advancement of Astronomical Science (1902).

Interest (part), \$453.24

Gift, 200.00

Sales, 30.02 **\$683.26**

Anonymous Gift (1902), 541.56

Thomas G. Appleton, 234.00

J. Ingersoll Bowditch, 117.00

Uriah A. Boyden, 9,360.00

Charlotte Harris, 93.60

Haven, 2,106.00

James Hayward, 982.80

Observatory Endowment, 2,340.00

Paine Professorship, 2,340.00

Robert Treat Paine, 12,814.17

Edward B. Phillips, 5,161.76

Josiah Quincy, 574.47

James Savage ($\frac{1}{2}$ net income), 416.40

David Sears, 1,709.23

Augustus Story, 626.18 **40,100.43**

Gifts for publishing Lunar Photographs.

Gifts, \$700.00

Interest, 8.39 **708.39**

Mrs. Henry Draper, gift for special research (additional), . . 9,999.96

Use of house by College officer, \$600.00

Sale of Annals, 40.37

" lantern slides, 3.00

" grass, 35.00 **678.37**

Trustees of **Sturgis Fund**, on account of printing Annals, 2,756.77

Gift for immediate use, 500.00

\$55,118.13

PAYMENTS.

From Anonymous Gift (1902), addition to brick building, **\$4,277.02**

Reflector, cases, and sundries, 2,243.34 **\$6,520.36**

" Advancement of Astronomical Science Fund (1902), 216.50

" **Uriah A. Boyden Fund**, supplies, apparatus, services, &c., 10,000.64

" **Draper Memorial**, supplies, apparatus, services, &c., . . . 7,251.70

" Gifts for publishing Lunar Photographs, 875.43

Salaries, \$15,700.00

Services and wages, 7,459.67

Amounts carried forward, \$23,159.87 \$24,864.83

TABLE NO. X, OBSERVATORY, CONTINUED.

PAYMENTS.

Amounts brought forward,	\$23,159.67	\$24,864.63
Repairs and improvements,	2,433.22	
Cleaning and care of Observatory,	601.45	
Labor,	1,570.00	
Fuel,	708.97	
Water,	52.09	
Lighting,	146.89	
Printing,	2,107.25	
Furniture,	362.16	
Instruments and apparatus,	373.24	
Stationery, postage, and telegraphing,	708.53	
Telephone,	127.21	
Books,	504.20	
Binding,	613.16	
Supplies and materials,	900.93	
Freight,	266.17	
Sundries,	12.35	
Use of house,	90.00	
Electric power,	79.09	
Interest on advances,	146.09	34,962.66
		<u>\$59,827.29</u>

TABLE NO. XI.

BUSSEY INSTITUTION.

RECEIPTS.

Income of Funds.

Bussey Institution (balance),	\$1,256.16	
Bussey Trust ($\frac{1}{4}$ net income),	5,898.21	\$7,154.37
Tuition fees,		3,565.00
Sale of wood, hay, and sundries,	\$300.73	
Horticultural Departm't, prizes, sale of flowers, plants, &c.,	2,646.27	
Board of animals,	5,517.97	
Use of house by College officer,	600.00	9,064.97
		<u>\$19,784.34</u>

PAYMENTS.

Salaries,	\$8,000.00
Services and wages,	3,081.70
Repairs and improvements,	442.54
Fuel,	599.20
Gas,	41.30
Water,	21.40
Printing,	91.14
Furniture,	4.10
Amount carried forward,	\$12,281.38

TABLE NO. XI, BUSSEY INSTITUTION, CONTINUED.

PAYMENTS.

Amount brought forward,	\$12,281.88	
Stationery and postage,	25.64	
Books,	85.51	
Instruments and apparatus,	102.00	
Insurance,	470.80	
Horticultural Department, expenses,	2,559.21	
Grain, farming tools, &c.,	2,099.69	
Legal expenses,	21.74	
Diplomas,	10.60	
Diploma plate,	150.00	
Horse,	75.00	
Steam heating plant at Mansion House,	954.50	
Sundries,	29.90	\$18,865.97

TABLE NO. XII.

ARNOLD ARBORETUM.

RECEIPTS.

Gifts for capital account.		
Arnold Arboretum Fund (additional),		\$6,475.00
Income of Funds.		
Arnold Arboretum,	\$5,628.31	
James Arnold,	7,456.60	
William L. Bradley. Interest,	\$1,034.75	
Gift,	600.00	1,634.75
Gifts for construction,	295.22	15,014.88
Sale of grass and materials,	\$1,682.75	
Gift for present use,	1,375.00	3,057.75
		<u><u>\$24,547.68</u></u>

PAYMENTS.

William L. Bradley Fund, bibliography,	\$1,041.46	
Salaries of Director and Assistant,	3,500.00	
Repairs and improvements,	241.57	
Labor,	6,021.84	
Fuel,	371.07	
Water,	49.00	
Printing,	4.30	
Furniture,	151.00	
Stationery and postage,	194.53	
Services and wages,	4,664.13	
Supplies, tools, and materials,	751.94	
Freight,	284.65	
Rent of land leased from Adams Nervine Asylum, . . .	150.00	
Expenses of expeditions for collecting,	76.95	
Sundries,	15.71	\$17,518.15

TABLE No. XIII.
MISCELLANEOUS FUNDS.
Sundry Funds for Special Purposes.

Receipts.

Income of Funds, Gifts, &c.			
Advancement of Astronomical Science (1901), . .	\$2,357.83		
“ “ “ “ (1902) (part),	453.25		
Edward Austin. Interest,	\$22,272.91		
Less appropri'ns as per tables II and VI, 17,633.88	4,639.03		
Bussey Trust, net income from Real Estate, . .	15,796.42		
Class of 1834,	52.03		
“ 1844,	300.53		
“ 1853,	149.00		
Caroline Brewer Croft (part),	2,151.38		
Calvin and Lucy Ellis “	93.91		
Calvin and Lucy Ellis Aid (part),	335.33		
Gifts for additions to The Soldier's Field,	94.23		
Gifts for Cuban Teachers,	1.33		
Gospel Church ($\frac{1}{2}$ income),	147.98		
Gurney (part),	1,000.00		
Charles L. Hancock (part),	41.36		
Harvard Memorial Society,	61.78		
Robert Troup Paine (accumulating),	1,435.23		
Professorship of Hygiene (part),	3,634.97		
John W. and Belinda L. Randall,	252.81		
Nelson Robinson Jr.,	\$20,420.57		
Less amount entered in Table II, . .	15,420.57	5,000.00	
Alexander W. Thayer (part),	480.00		
Charles Wilder,	1,872.00		
Daniel Williams,	778.94		
Sarah Winslow,	224.41		
Woodland Hill.			
Land taken by the City of Boston for widening Walter Street,	\$4,827.00		
Sewer easement taken by the Com- monwealth,	10,000.00		
Interest,	903.10	15,730.10	\$57,083.85

Payments.

From the following Funds and Gifts.		
Advancement of Astronomical Science (1901), annuity,	\$2,380.51	
Advancement of Astronomical Science (1902), annuity,	316.22	
Amount carried forward,	\$2,696.73	

TABLE NO. XIII, MISCELLANEOUS FUNDS, CONTINUED.

Sundry Funds for Special Purposes (*continued*).*Payments.*

Amount brought forward,	\$2,696.73	
From the following Funds and Gifts (<i>continued</i>).		
Bussey Trust. Annuities,	\$4,000.00	
One half of the remaining income to the Bussey Institution ,	5,898.21	
One quarter to the Divinity School,	2,949.11	
One quarter to the Law School,	2,949.10	15,796.42
Class of 1853 , Secretary of the Class,	149.00	
Caroline Brewer Croft , annuity,	2,208.60	
Calvin and Lucy Ellis , taxes,	93.91	
Gifts for Cuban Teachers, expenses,	150.00	
“ Additions to The Soldier's Field, land,	5,242.96	
“ Improvements and Additions to The Sol- dier's Field, real estate,	6,257.04	
“ Land in New Hampshire,	1,692.52	
Gurney , annuities,	1,000.00	
Charles L. Hancock , taxes on Chelsea real estate,	41.36	
Harvard Memorial Society , Treasurer of the So- ciety,	120.26	
Pennoyer Scholarships , postage and commissions on income, paid Baring Bros. & Co.,	29.15	
Professorship of Hygiene. Annuity,	\$2,000.00	
Legal expenses,	15.75	2,015.75
John W. and Belinda L. Randall , Harvard Social Service Committee,	100.00	
Alexander Wheelock Thayer , annuity,	480.00	
Charles Wilder , annuity,	1,920.00	
Daniel Williams. Treasurer of Mashpee Indians,	\$523.84	
“ “ Herring Pond Indians,	256.12	779.96
Sarah Winslow, Teacher at Tyngsborough, Mass.,	\$112.09	
Commission on income, credited to Univ.,	5.61	117.70
Woodland Hill. Taxes,	\$1,000.48	
Cost of wall on Walter Street (part),	2,301.50	3,201.98
		\$44,093.34

TABLE NO. XIII, MISCELLANEOUS FUNDS, CONTINUED.

Construction Accounts.*Receipts.***Emerson Hall.**

Gifts,	\$115,595.75	
Interest,	518.87	\$116,114.62
New Library Building,		10,000.00
Pierce Hall, Gift,		750.00
Semitic Building. Repayment,	\$202.68	
Interest,	141.02	343.70
John Simpkins Hall, Interest,		50.78
Stillman Infirmary. Gift,	\$50,000.00	
Interest (part),	375.53	50,375.53
University Museum, interest,		128.53
Gifts for Improvements and Additions to The Soldier's Field.		
Gifts,	\$30,000.00	
Interest,	2,772.64	22,772.64 \$200,535.90

*Payments.***Emerson Hall.**

Architects, services,	\$176.00	
Treasurer of Committee, for expenses,	1,042.80	1,218.80
Pierce Hall, construction, furniture, and equipment,		5,055.14
Semitic Building and furniture,		7,309.60
John Simpkins Hall,		624.54
Stadium,		27,978.22
Stillman Infirmary, construction, furniture and equip- ment,		2,518.06
University Museum,		344.29 \$45,048.65

Sundry Accounts.*Receipts.*

Bursar's Sundry Accounts,	\$476,424.97	
Advances from General Investments to		
Botanic Department,	\$1,590.63	
Uriah A. Boyden Fund,	640.64	
Hayward Book Fund,	18.79	
Medical School Undertaking,	13,179.64	
Observatory,	440.99	
Peabody Museum of American Archae- ology and Ethnology,	844.91	
Sundry Accounts,	731.83	17,447.43
Gains and Losses for General Investments.		
Gain on sale of United States 4's of 1925, \$85,662.61		
" " Baltimore & Ohio Conv.		
Deb. 4's of 1911,	10,039.50	95,702.11
Amount carried forward,	\$589,574.51	

TABLE NO. XIII, MISCELLANEOUS FUNDS, CONTINUED.

Sundry Accounts (*continued*).*Receipts.*

Amount brought forward,	\$589,574.51		
Gains from change of Special Investments.			
Calvin and Lucy Ellis Fund.			
Gain on sale of real estate in Boston, \$1,600.00			
Calvin and Lucy Ellis Aid Fund.			
Gain on sale of real estate in Boston, 1,600.00			
Mary L. Whitney Scholarship Fund.			
Gain on sale of City of Laramie 10-30			
6% Funding Bonds,	10.56	3,210.56	
Sundry balances,		2,494.00	
Transfers to			
Dexter Lectureship Fund,			
from Divinity School,	\$5,263.99		
Henry L. Pierce Building Fund,			
from Henry L. Pierce Residuary			
Bequest,	4,305.14	9,569.18	\$604,848.20

Payments.

Bursar's Sundry Accounts,	\$478,865.80		
Advances from General Investments, repaid by			
Classical Publication Fund of the Class			
of 1856,	\$348.19		
Caroline Brewer Croft Fund, . . .	85.70		
Fund for the Advancement of Astronomical			
Science (1902),	17.56	451.45	
Losses from change of Special Investments.			
David Ames Wells Fund.			
Loss on sale of \$1,000 The Electric			
Corporation 7's of 1992,	\$25.40		
Pennoyer Scholarship Fund.			
Loss on sale of Asten's Farm, Pulham,			
Norfolk, England,	455.22		
Rumford Professorship.			
Commission paid Baring Bros.			
& Co. on account of French			
Rente, sold in 1888,	\$141.83		
Less balance of proceeds of sale			
of French Rente, in 1888, . . .	69.31	72.52	553.14
Mary R. Searle Fund,			
New York State tax on transfer of securities, . . .		76.50	
Transfers from			
Divinity School,			
to Dexter Lectureship Fund, . . .	\$5,263.99		
Henry L. Pierce Residuary Bequest,			
to Henry L. Pierce Building Fund,	4,305.14	9,569.18	\$489,516.02

GENERAL SUMMARY OF THE TABLES.

Table.	Receipts.	Payments.
I. University,	\$187,376.02	\$142,102.15
II. College,	1,356,175.61	803,237.53
III. Library,	53,596.04	71,699.04
IV. Divinity School,	36,080.08	43,122.28
V. Law School,	125,519.00	91,968.04
VI. { Medical School,	158,602.74	167,824.95
" " Undertaking,	950,391.06	77,783.39
VII. Dental School,	22,624.00	23,818.79
VIII. Museum of Comparative Zoölogy,	36,782.85	42,062.26
IX. Peabody Museum of American Archae- ology and Ethnology,	10,563.58	12,141.23
X. Observatory,	55,118.13	59,827.29
XI. Bussey Institution,	19,784.34	18,865.97
XII. Arnold Arboretum,	24,547.63	17,518.15
XIII. { Sundry Funds for Special Purposes, . . .	57,083.85	44,093.34
Construction Accounts,	200,535.80	45,048.65
Sundry Accounts,	604,848.20	489,516.02
	<hr/> \$3,899,628.93	<hr/> \$2,150,649.08
	2,150,649.08	
Net increase of the Funds and balances, .	\$1,748,979.85	
Deduct gifts for capital account,	1,340,876.28	
Balance, which is the net increase of Funds and balances, excluding gifts for capital account, as is also shown on page 60,	<hr/> \$408,103.57	

Certificate of the Committees of the Corporation and Overseers of Harvard College, for examining the Accounts of the Treasurer.

The committees appointed by the Corporation and Overseers of Harvard College to examine the accounts of the Treasurer for the year ending July 31, 1903, have, with the assistance of an expert chosen by them, examined and audited the Cash-book and Journal covering the period from August 1, 1902, to July 31, 1903, inclusive, and have seen that all the bonds, notes, mortgages, certificates of stock, and other evidences of property, which were on hand at the beginning of said year, or have been received by him during said year, are now in his possession, or are fully accounted for by entries made therein; they have also noticed all payments, both of principal and interest, indorsed on any of said bonds or notes, and have seen that the amounts so indorsed have been duly credited to the College.

They have in like manner satisfied themselves that all the entries for moneys expended by the Treasurer, or charged in his books to the College, are well vouched; such of them as are not supported by counter entries, being proved by regular vouchers and receipts.

They have also seen that all the entries for said year are duly transferred to the Ledger, and that the accounts there are rightly cast, and the balances carried forward correctly to new accounts.

(Signed,)

HENRY L. HIGGINSON,	}	<i>Committee on the part of the Corporation.</i>
ARTHUR T. CABOT,		

MOSES WILLIAMS,	}	<i>Committee on the part of the Board of Overseers.</i>
WILLIAM C. ENDICOTT,		
ALFRED BOWDITCH,		

Boston, January 9, 1904.

THE UNIVERSITY PUBLICATIONS

*(Entered at the Post-office, Boston, Mass., as Second Class mail matter, April 8, 1901.
Act of July 16, 1894.)*

Issued twice a month from August to March inclusive, and
six times a month from April to July inclusive.

These publications include:—

The Annual Reports of the President and of the Treasurer.

The Annual University Catalogue.

The Annual Catalogues of the College and the several Professional Schools of the University: the Announcements of the several Departments: etc., etc.

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